Smiles

CONSPECTUS

MEDICINÆ THEORETICÆ.

AUCTORE

JACOBO GREGORY, M. D.

CUI ADJICIUNTUR

ORDO, TRANSLATIO, ET NOTÆ,

AB

I. STEGGALL, M. D. &c.

EDITIO ALTERA.

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PREFACE.

The following edition and translation of "Gregory's Conspectus Medicinæ Theoreticæ," has been undertaken with a view to assist Medical Students, who are not very conversant with Latin, but still have made themselves to some extent familiar with grammatical construction. To those who are more advanced a translation is uncalled for, and this circumstance furnishes an apology for any want of elegance in the translated portion of the work.

The original text is found in one column, in Roman characters, and an ordo, or interpretation, is printed in Italics, opposite the corresponding paragraphs. In it, words will often be seen enclosed in brackets, and point out such as are really understood, or would become necessary to complete the meaning. Let it be also recollected, that the ordo here given, is not the only precise one in which every word is to be taken, for in some very long sentences many persons may begin in different ways, but still the construction of the language must remain the same. The translation below is nearly verbatim, excepting such passages as require a little alteration to render the sense more clear and intelligible.

A great similarity will of course be found between parts of the following translation and those of another translation, published a few years since. Such an occurrence is inevitable, for any tyro, at all acquainted with Latin, can scarcely fail to use the terms here applied, and, indeed, the

brevity and simplicity of the sentences will not admit of being rendered in any other manner.

This translation is not presumed to be worthy of being put in competition with the other, a work prepared with great accuracy and elegance, such as possibly may have emanated from the Latin author himself.

The arrangement of the edition has been adopted from a desire to accommodate all classes of Junior Medical Latin Readers. Some stand in need of neither ordo nor translation, and may consult the text alone. Some derive sufficient assistance from an ordo or interpretation; whilst others, less proficient, using a translation without an ordo, either from idleness or inattention, might mistake the words construed, and when called upon to translate without such assistance, would expose numerous errors and absurdities.

It is by no means the wish of the Translator, by thus lending his assistance in this little work, to deprive gentlemen of the fruits to be reaped from a regular and systematic course of study, which should be commenced from an early period; but to those who have not enjoyed such advantages, such aid cannot be useless or improper; for if they can acquire in a shorter period a knowledge of the small allotted portion of Latin Medical Authors, they will be enabled to devote more time to the practical parts of their profession; the most essential, but universally the most neglected, during their attendance on the Medical Practice of the Hospitals.

That Students may not misapply, but profit by the intention of this little effort, and endeavour perfectly to comprehend the task they undertake, is the constant and earnest desire of the Translator.

CONSPECTUS

MEDICINÆ THEORETICÆ.

CAP. I.—*Generalia quædam præfanda de functionibus corporis vivi; de natura causisque morborum; de viribus corpori insitis, quæ sanitatem tuentur morbosque depellunt; nec non de remediorum natura, viribus, et effectibus.*

1. CORPUS humanum, arte prorsùs divinâ fabricatum, multis et miris fungitur muneribus; quorum alia ad res externas, alia ad seipsum tantùm, pertinent.

CONSPECTUS

MEDICINÆ THEORETICÆ.

CAP. I.—*(Caput primum continet) quædam generalia præfanda, de functionibus corporis vivi; de naturâ que causis morborum de viribus insitis corpori, quæ (vires) tuentur sanitatem, que depellunt morbos; nec non de naturâ, (de) viribus et effectibus remediorum.*

1. CORPUS *humanum, fabricatum prorsùs divinâ arte, fungitur*[1] *multis et miris muneribus; quorum (munerum) alia pertinent ad res externas, alia (pertinent) ad seipsum (corpus) tantùm.*

A CONSPECTUS

OF THEORETICAL MEDICINE.

CHAP. I. *Contains some general prefatory (observations) on the functions of the living body, on the nature and causes of diseases, on those innate powers of the body which watch over health and ward off diseases, also on the nature, properties and effects of remedies.*

1. The human body, framed entirely by divine contrivance, performs many and wonderful functions; some of which relate to external objects, others refer only to the body itself.

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1. *Fungor, fruor*, &c. govern the ablative case.

2. Ad alterum genus referuntur sensus omnis motusque voluntarius; quibus, quantumvis simplicibus, viribus, mundum cognoscimus, terrarum potimur. Hæ functiones animales apud medicos dicuntur.

3. Minimè verò omni tempore ad has functiones valemus: longâ enim aut validâ sive animi sive corporis exercitatione utriusque vires insitæ exhauriuntur. In hoc autem statu brevi monemur, et tandem dulci necessitate cogimur, labores omnes et voluptates pariter intermittere curasque deponere, et nosmetipsos defessos et hebescentes somni amplexibus committere;

2. *Omnis sensus que motus voluntarius referuntur ad alterum genus (munerum); quibus viribus quantumvis simplicibus (nos) cognoscimus mundum, potimur*[2] *terrarum. Hæ functiones dicuntur animales apud medicos.*

3. *Verò minimè valemus ad has functiones omni tempore; enim (à) longâ aut validâ exercitatione sive animi, sive corporis, insitæ vires utriusque (i. e. animi et corporis) exhauriuntur. Autem in hoc statu (nos) monemur brevi (tempore) et tandem (nos) cogimur dulci necessitate, intermittere pariter omnes labores et voluptates que deponere curas, et committere nosmetipsos defessos et hebescentes*

2. All sense and voluntary motions are referred to the one description of functions; by such powers, however simple, we become acquainted with the globe, (and) take possession of the earth. These functions are called animal by medical men.

3. But we are by no means competent to these functions at all times; for by long or powerful exercise of the mind or the body, the innate powers of both are exhausted. But in this state we are early admonished, and at length are obliged by grateful necessity, equally to relax from all labours and pleasures, and lay aside cares, and to commit ourselves fatigued and languid to the embraces of sleep, in

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2. *Potior* governs either the genitive or ablative case.

cujus grĕmio foti et refecti, resurgamus denuò vegeti et alacres, et ad omnia vitæ munera aptissimi.

amplexibus somni; gremio cujus (i. e. somni) foti et refecti, nos resurgamus denuò vegeti et alacres, et aptissimi ad omnia munera vitæ

4. Ad alterum genus referri solent actiones cunctæ, quarum ope corpus vivit exhaustumque reficitur corruptumque purgatur. Hæ verò sunt vel vitales vel naturales.

5. Vitales dicuntur functiones illæ quæ ad vitam adeò necessariæ sunt, ut sine vitæ discrimine, ne quidem per exiguum tempus, suspendi aut interrumpi queant; cerebri, nimirùm, nervorumque actio, sanguinis circuitus, et respiratio.

6. Machina verò animalis sic constituta statim defluit, citò etiam periret: nam omni motu partes solidæ teruntur,

4. *Ad alterum genus actiones cunctæ solent referri ope quarum (actionum) corpus vivit que exhaustum reficitur, que corruptum purgatur. Verò hæ (functiones) sunt vitales vel naturales.*

5. *Illæ functiones dicuntur vitales, quæ sunt adeò necessariæ ad vitam ut queant suspendi aut interrumpi ne quidem per exiguum tempus, sine discrimine vitæ; nimirùm actio cerebri, que nervorum, circuitus sanguinis, et respiratio.*

6. *Verò machina animalis sic constituta statim defluit, etiam citò periret: nam omni motu partes solidæ te-*

whose bosom, cherished and refreshed, we may arise again lively and alert, and best fitted for all the duties of life.

4. To the other description of functions all those actions are referred by the aid of which the body lives, and (when) exhausted is repaired, and (when) corrupted is purified. But these actions are vital or natural.

5. Those functions are called vital which are so necessary to life, that they cannot be suspended or interrupted, even for a little space of time without peril to life; such are, the action of the brain, and nerves, the circulation and respiration.

6. But the animal machine thus formed immediately decays, and would speedily perish; for by every motion

fluidæ dissipantúr, corpus, debile, macrum exhaustumque relicturæ: quinetiam utræque sponte putrescunt et corrumpuntur; sic etiam brevi ipse sibi homo acerrimum venenum compararet.

runtur, fluidæ (partes) dissipantur, relicturæ corpus debile macrum que exhaustum; quinetiam utræque (partes solidæ et fluidæ) putrescunt et corrumpuntur spontè; etiam sic brevi (tempore) ipse homo compararet sibi venenum acerrimum.

7. Sed nusquam alma rerum parens prolem deserit. Contrà, non modò his malis, quæ semper et ubique necem minitantur et inopi sine dubio inferrent, remedium suggerit, verùm insùper mirabili artificio efficit, ut ex hâc ipsâ homo necessitudine novum ferat et perennem vigorem.

7. *Sed alma parens rerum nusquam deserit prolem. Contrà (illa i.e. parens) non modo suggerit remedium his malis, quæ minitantur necem semper et ubique et inferrent*[3] *inopi (proli) sine dubio, verùm insùper efficit mirabili artificio, ut homo ferat novum et perennem vigorem ex hâc ipsâ necessitudine.*

8. Attrito enim corpore parteque humorum ab-

8. *Enim corpore attrito, queparte humorum absumptâ*

of the body the solid parts are worn away, the fluid parts are dispersed, leaving the body weak, emaciated and exhausted; moreover they both putrify and are decomposed spontaneously, so that man himself would be preparing for his own body a most deleterious poison.

7. But the kind parent of nature nowhere deserts her offspring, on the contrary, she not only supplies a remedy for those evils which always and every where threaten with death, and would indubitably inflict upon it unprepared, but moreover she manages by wonderful contrivance, that man should receive renewed and yearly vigor from this very necessity.

8. For the body being worn away, and a portion of the

3. Compound verbs with the preposition *in*, &c. govern the dative case.

sumptâ, nutrimento et potu egemus; cibum itaque potumque appetimus, sumimus, concoquimus: concoctus uterque per totum corpus diffunditur, qua opus est apponitur; quod superest utriusque ejicitur. Putrescentes quoque vel aliter corrupti humores, a reliquis secreti, idoneâ viâ e corpore excernuntur. Plurimi denique a massâ generali succi, diversi ab illâ et diversi inter se, variisque intra corpus usibus accommodati, assiduè secernuntur.

(nos) egemus nutrimento et potû; itaque (nos) appetimus, sumimus, concoquimus cibum que potum; uterque (i. e. cibus et potus) concoctus diffunditur per totum corpus, (et) apponitur quà opus est; quod superest utriusque (potûs vel cibi) ejicitur. Quoque humores putrescentes vel aliter corrupti, secreti a reliquis excernuntur a corpore viâ idoneâ. Denique plurimi succi diversi ab illâ (i. e. massa generali) et diversi inter se, que accommodati variis usibus intra corpus, secernuntur assiduè a massâ generali.

9. Hæ vocantur functiones naturales, ad vitam quidem necessariæ, sed quæ paulisper facilè, et sine periculo suspendi possunt:

9. *Hæ functiones vocantur naturales, quidèm necessariæ ad vitam, sed quæ possunt suspendi paulisper facilè et sine periculo; sci-*

humors being removed, we stand in need of nourishment and drink; therefore we seek after, take and digest food and drink; each of them when digested is diffused through the whole body, and deposited where it is required; what remains of each is thrown out. Also humors disposed to putrify or otherwise corrupt secreted by other humours, are excreted from the body by a proper channel. Lastly, many juices differing from the general mass, and differing amongst themselves, and most fitted for various uses within the body, are constantly secreted from the general mass.

9. Those functions are called natural, necessary indeed to life, but which may be suspended for a short time, easily and without danger, such are digestion, secretion and excretion.

concoctio, scilicet, secretio et excretio.

10. Vitalibus, igitur, et naturalibus functionibus homo vivit, viget, reficitur, purgatur, ad animales exercendas idoneus evadit: nobile opus, nec nisi Uni excogitandum; certè omne humanum ingenium tantum excedens, ut mente quamvis sagace, toties exploratum, non capiatur; neque singularum, partium functiones, neque universarum nexus, neque fons et origo virium quibus machina movetur, hactenùs detegantur.

11. Nulla enim præter animalem machina proprio motu cietur; nulla alia, pe-

licet, concoctio, secretio et excretio.

10. *Igitur homo vivit, viget, reficitur, purgatur vitalibus et naturalibus functionibus (et ille) evadit idoneus ad animales (functiones) exercendas:*[4] *opus nobile, nec excogitandum*[5] *nisi Uni; certè (illud i. e. nobile opus) tantum excedens omne humanum ingenium, ut (quamvis) toties exploratum non capiatur mente quamvis sagace; neque functiones singularum partium, neque nexus universarum (partium) neque fons et origo virium, quibus (viribus) machina movetur, hactenùs detegantur.*

11. *Enim nulla machina præter (machinam) animalem cietur proprio motu nulla*

10. Therefore man lives, thrives, is replenished and cleansed, by the vital and natural functions, and becomes fitted for exercising the animal functions: a noble work not to have been contemplated but by the Supreme Being alone; so much exceeding human understanding, that (although) explored so many times, it cannot be comprehended by minds the most sagacious; nor can the functions of individual parts, nor the connection of the parts collectively, nor can the source or origin of the powers by which the machine is moved up to the present time be discovered.

11. For there is no machine besides the animal frame which is propelled by its own inherent motion; none other

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4 & 5. *Gerunds* are sometimes used and construed as nouns adjective.

ricula sibimet imminentia suâ sponte summovet, nec res quibus eget sibi ministrat.

12. Primo statim aspectu, talis machina, nisi fortè causâ aliquâ externâ corrupta vel læsà, in omne ævum durabilis videtur: et quidem solâ experientiâ contrarium docemur. Homo enim, quamvis sanus et robustus et vegetus, labentibus annis, et ipse dilabitur, senescit, moritur, in pristina elementa solvitur, aliis animantibus pabulum futurus.

13. Hæc autem Naturæ lex, hoc consilium; ut singuli pereant homines, gens humana floreat. Hinc sexus,

alia (machina) suâ sponte summovet pericula imminentia sibimet, nec ministrat sibi res, quibus (rebus) eget.[6]

12. *Statim primo aspectû talis machina videtur (esse) durabilis in omne ævum nisi (sit) forte corrupta vel læsa aliquâ causâ externâ; et quidem (nos) docemur*[7] *contrarium solâ experientiâ. Enim homo, quamvis sanus et robustus et vegetus, annis labentibus et ipse dilabitur, senescit, moritur, (et) solvitur in pristina elementa, futurus pabulum aliis animantibus.*

13. *Autem hæc (est) lex Naturæ, hoc (est) consilium (naturæ) ut singuli homines pereant, gens humana floreat. Hinc sexus*

removes spontaneously dangers which are impending over it, or furnishes to itself necessary supplies.

12. At first sight such a machine appears to be lasting to every age, unless it be by chance destroyed or injured by some external agent; but indeed we are taught the contrary by experience alone, for man, though healthy, robust, and lively, as the years glide on, sinks down himself, becomes old and dies, and is resolved into his pristine elements, about to become food for other animals.

13. Such is the law of nature, such is the design; that individuals may perish whilst the human race thrives.

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6. Verbs of abounding, or the contrary, such as to stand in need, are coupled with an ablative case.

7. Verbs of teaching, concealing, &c. govern the accusative case.

hinc generatio et proles, et quicquid suavis, quicquid amari, alma Venus habet.

(est), hinc generatio et proles (sunt), et quicquid alma Venus habet suavis quicquid (habet) amari.

14. Sed ipse terrarum et quæ eas incolunt animalium dominus, parvus, debilis, fatuus, omnium rerum inops, nascitur: solâ parentum curâ diu conservatur, fovetur, alitur: paulatim crescit, pubescit, adolescit, sapit: forma et animi et corporis viribus parentes æquat; eadem gaudet exercere munera; tandem, ingravescentibus annis, communem sortem subiturus.

14. *Sed (homo) ipse dominus terrarum et animalium quæ incolunt eas, nascitur parvus, debilis, fatuus, inops omnium rerum; (ille i. e. homo) diu conservatur, fovetur, alitur solâ curâ parentum (ille) paulatim crescit, pubescit, adolescit, sapit; (ille) æquat parentes et formâ animi et viribus corporis, (ille) gaudet exercere eadem munera; tandem annis ingravescentibus (ille) subiturus (est) communem sortem.*

15. Hæc omnia universo generi communia; nec desunt multa singulis hominibus propria. Non secus

15. *Hæc omnia (sunt) communia universo generi; nec multa propria singulis hominibus desunt. Enim*

Hence sex, generation and offspring, and the sweets and bitters which fond Venus imparts.

14. But man himself, lord of the earth and of the animals which inhabit it, is born diminutive, weak in body, feeble in mind, in want of all things; he is for a long time preserved, cherished and nourished by the sole care of his parents; by degrees he grows up to youth, to manhood, and old age, and becomes wise; and equals his parents both in the frame of his body and strength of his mind; he enjoys the exercise of the same functions, and at last, as years weigh upon him, he is about to undergo the common lot of all.

15. These qualities are common to the whole human race; nor are there wanting many things which are pecu-

enim ac vultus, corporis constitutiones variant. Hæ quidem varietates nullo modo exequendæ sunt, tamen ad certa capita non ineptè referri solent, quæ temperamenta κατ' εξοχην dicuntur; quorum scientia medico haud parùm proderit.

16. Hujusmodi varietates non corporis modo, verum et animi quoque, plerumque congenitæ, nonnunquam hæreditariæ, observantur. Hoc modo parentes sæpè in prole reviviscunt; certè parentibus liberi similes sunt, non vultum modò et corporis formam, sed animi indolem, et virtutes, et vitia. —Imperiosa gens Claudia diu Romæ floruit, impigra,

constitutiones corporis variant non secus ac vultus. Quidem hæ varietates nullo modo sunt exequende, tamen solent referri ad certa capita haud ineptè, (illa) quæ dicuntur temperamenta κατ' εξοχην; *scientia quorum (temperamentorum) proderit medico haud parùm.*

16. *Varietates hujusmodi non modo corporis, verum et animi quoque observantur, plerumque congenitæ, nonnunquam hæreditariæ. Hoc modo parentes sæpe reviviscunt in prole; certè liberi sunt similes parentibus non modo (secundum) vultum*[8] *et formam corporis, sed (secundum) indolem animi et virtutes et vitia. Imperiosa gens Claudia, impigra*

liar to individuals. For bodily constitutions vary no less than the countenance. These varieties are by no means to be defined, but are wont to be referred to certain heads, not without propriety, and are called temperaments for the sake of distinction; a knowledge of which will be of no trifling use to the medical man.

16. Varieties of this kind are observed not only in the body but in the mind also, they are frequently congenital, sometimes hereditary. In this manner, parents frequently revive in their descendants, not only as to the countenance and frame of the body, but in the disposition, virtues and vices. The imperious Claudian family lived for a long time

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8. The accusative case is sometimes adjoined to adjectives and participles where the preposition *secundum* seems to be understood.

ferox, superba; eadem illachrymabilem Tiberium, tristissimum tyrannum, produxit; tandem in immanem Caligulam, et Claudium, et Agrippinam, ipsumque demùm Neronem, post sexcentos annos, desitura.

ferox, superba diù floruit Romæ; eadem (gens) produxit illachrymabilem Tiberium, tristissimum tyrannum; tandem desitura in immanem Caligulam et Claudium, et Agrippinam, que demùm ipsum Neronem post sexcentos annos.

17. Quin et ab aliis causis, firmâ adhuc valetudine, corpus humanum multas et graves subit mutationes; et imprimis a vitæ genere et victu quo utimur, ab ipso sub quo degimus cœlo, et ab immensâ vi consuetudinis. Hæc quoque medicum oportet novisse.

17. *Quin corpus humanum subit multas et graves mutationes et ab aliis causis, valetudine*[9] *adhuc firmâ, et imprimis a genere vitæ et victu quo utimur ab ipso cœlo sub quo (nos) degimus et ab immensâ vi consuetu dinis. Oportet quoque medicum novisse hæc.*

18. Secunda, igitur, valetudo nullis est definienda verbis, neque profectò facilè

18. *Igitur secunda voletudo definienda est nullis verbis, neque profectò facilè*

at Rome, restless, ferocious and haughty. The same family produced the tearless Tiberius, a most miserable tyrant, at length about to close its existence by the outrageous Caligula, Claudius, Agrippina, and lastly Nero himself, after a period of six hundred years.

17. Moreover the human body undergoes many and important changes also from other causes, the health being still unimpaired, in the first place from the mode of life and kind of food we make use of, from the atmosphere itself in which we exist, and from the unbounded sway of habit. It is necessary that the practitioner should be acquainted with these things.

18. Therefore good health cannot be defined, nor indeed

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9. Nouns taken in an absolute sense, where no preposition is understood, and of which the sense is rendered evident by the word being, are put in the ablative case.

describenda; quippe quam Natura ipsa, non sine sapiente consilio, variam fecerit. Scire tamen juvabit, perfectissimam florentis ætatis homini contingere sanitatem, cui mens sana, optimum Dei donum, data est; qualis non modò ad solita vitæ munera sufficiat, sed variis quoque casibus et studiis et negotiis facilè se accommodet; quæ probè sentiens, et perspicax, et tenax, et percipit, et intelligit, et retinet, ut decet; quæ firma et serena, sive gravior fuerit sive hilarior, suique semper compos, neque suis inordinatis motibus neque externis casibus ludibrio est; sed propriis affec-

describenda (est); quippe[10] *quam natura ipsa fecerit variam non sine sapiente consilio. Tamen juvabit scire, sanitatem perfectissiman ætatis florentis contingere homini, cui mens sana optimum donum Dei, data est; qualis non modò sufficiat ad solita munera vitæ, sed (qualis) accommodet se quoque facilè casibus, et studiis et negotiis; quæ (mens sana) probè sentiens, et perspicax, et tenax, et percipit, et intelligit, et recipit, et retinet, ut decet; quæ (est) firma et serena sive fuerit gravior sive hilarior, que semper compos sui, (quæ) neque est ludibrio suis inordinatis motibus ne-*

easily be described by any terms; inasmuch as nature has made it so varied, though not without some wise intention. However, it will be useful to know that the most perfect health of the flower of age, falls to the lot of him, who is possessed of sound intellect, the noblest gift of God, such as may not only suffice for the purposes of life, but such as can also easily accommodate itself to the accidents, and studies and affairs, which a sound mind correctly feeling, and discerning, and tenacious, perceives, understands, receives and retains as it should do; such as is firm and calm, whether it be more oppressed or lively, and is always master of itself, and which becomes a laughing stock neither from its unmeasured emotions nor external accidents; such as governs, not obeys its own affections,

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10. *Quippe quam* come together, meaning, inasmuch as.

tibus imperat, non paret, rebusque secundis modestè fruitur, adversas fortitèr tolerat, et gravioribus, siqui acciderint, casibus, excitatur, non convellitur. Hæc, quidem, non modò sunt signa et indicia sanæ mentis, sed sani corporis quoque; et profectò ad hujus sanitatem haud parùm conferunt: scilicet donec in compage suâ corporeâ inclusa est, mens et corpus multùm afficit et ab eo afficitur vicissim.

que externis casibus; sed (quæ) imperat[11] *non paret*[11] *propriis affectibus, que fruitur modestè secundis rebus, tolerat fortiter adversas (res) et excitatur non convellitur gravioribus casibus siqui acciderint. Hæc quidem sunt non modò signa et indicia sanæ mentis, sed quoque sani corporis et profecto conferunt haud parum ad sanitatem hujus (i. e. sani corporis); scilicet mens, donec inclusa est in compage suâ corporeâ et afficit corpus multum, et vicissim afficitur ab eo.*

19. Quod ad hoc verò attinet, validissimum et ferè sanissimum est corpus justæ magnitudinis et benè formatum, neque procerum

19. *Verò quod attinet ad hoc (i. e. corpus), corpus ferè est validissimum et sanissimum justæ*[12] *magnitudinis*[12] *et benè formatum, neque*

which modestly enjoys prosperity, and bears adversity with fortitude, and is excited not distracted by the severer accidents if any fall to its lot. These qualities are not only the characters and evidences of a sound mind, but also of a sound body, to the health of which they afford no little support, for as long as the mind is confined in its corporeal frame, it both greatly affects the body and is in turn affected by it.

19. But as to the body it is commonly most powerful and healthy, when of average size and well formed, not too tall, nor too short, not thin nor oppressed with much fat;

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11. Verbs of obeying and disobeying govern the dative.

12. Nouns expressing the quality of a thing are put either in the genitive or ablative case.

nimis, neque breve, neque macrum, neque multâ pinguedine grave; sed quadratum potius quam gracile, et amplo imprimis thorace latisque humeris instructum; cui ossa grandiora sunt, et musculi torosi, benè expressi, et firmi, et fortes, nunquam tremuli; et cutis mollis quasi humida, nunquam arida; et color, præsertim vultûs, bonus et constans, sive is pulchrior fuerit sive fuscior, dummodo neque ad flavum neque pallidum vergat; et vultus vegetus et hilaris, et oculi nitentes et vividi; et dentes integri et fortes; et gressus firmus, artubus corpus benè sustinentibus; et incessus erectus, et exercitatio omnis facilis, et labor tolerabilis, quamvis diuturnus et gravis;

neque nimis procerum, neque (nimis) breve, neque macrum neque grave multâ pinguedine; sed potius quadratum quam gracile, et imprimis instructum amplo thorace, que latis humeris, cui (corpori) ossa sunt grandiora et musculi torosi, benè expressi et firmi, et fortes, nunquam tremuli: et (cui corpori) (est) cutis mollis quasi humida, nunquam arida; et color presertim vultûs (est) bonus et constans, sive is (color) fuerit pulchrior sive fuscior, dummodo neque vergat ad flavum (colorem) neque pallidum; et (cui est) vultus vegetus et hilaris, et oculi nitentes et vividi; et dentes (sunt) integri et fortes; et gressus firmus (cum) artubus benè sustinentibus corpus; et incessus erectus et omnis exercitatio

but rather square-built than slender, and especially furnished with a full chest and broad shoulders, with bones rather large, with fleshy muscles, well marked, firm and strong, but never tremulous, with a skin soft as if moist, never dry; with a good and constant complexion, whether it be fair or dark, provided it does not incline to a yellow or pale colour, with a cheerful and lively countenance, bright and sparkling eyes, sound and strong teeth; a firm step, with limbs well supporting the body; an upright gait, and every exercise or labour supportable, although long continued and oppressive; with all the organs of the external functions properly competent to their functions, neither dull nor possessing too

et omnia sensuum externorum organa ad sua munera probè valentia, neque torpida neque nimis acriter sentientia; et somni leves et diuturni, haud faciles ruptu, qui corpus multùm reficiunt, et somniis vel prorsus carent vel saltem horrificis; et vel placidâ quiete et jucundis vitæ obliviis penitus sopiunt, vel gratis imaginibus animum suaviter recreant.—Sani porrò corporis indicia sunt, sanguinis motus temperatus, et pulsus arteriarum validi, pleni, molles, æquales, neque nimis frequentes, neque tardi, neque facilè præter solitum incitandi; et respiratio plena, facilis, lenta, parùm perspecta, neque multùm ab exercitatione quâvis ac-

facilis, et labor tolerabilis, quamvis diuturnus et gravis et omnia organa externorum sensuum probè valentia ad sua munera neque torpida neque sentientia nimis acriter; et (cui) somni (sunt) leves et diuturni haud faciles ruptu, qui reficiunt corpus multùm et (qui) carent somniis vel prorsus vel saltem horrificis et qui penitùs sopiunt placidâ quiete et jucundis obliviis vitæ vel recreant animum suaviter gratis imaginibus.—Porrò (hæc) sunt indicia sani corporis (videlecit) motus temperatus sanguinis, et pulsus arteriarum validi, pleni, molles, æquales neque nimis frequentes, neque tardi, neque facilè incitandi præter solitum; et respiratio plena, facilis,

acute sensibility; with sleep light, long continued, not easily broken, such as refreshes the body considerably, is entirely free from dreams, or at least without frightful ones, and such as completely drowns us in placid rest, and sweet oblivion of life, and sweetly refreshes the mind with pleasing images.—In addition to these, the signs of a healthy body are (the following), moderate motion of the blood, with pulsation of the arteries strong, full, soft, regular, neither too quick, nor too slow, nor easily excited beyond the usual (rate); the respiration full, easy, slow, slightly evident, nor much accelerated by any exercise; a voice strong and sonorous, of deep tone in men, not easily made hoarse; an agreeable breath, free at least from all kinds of fœtor, a

celerata, et vox fortis et sonora, et in viris gravis, haud facilè rauca facta; et halitus oris gratus, saltem omni fœtore carens, et os humidum, et lingua nitida, non verò nimis rubra; et cibi appetitus magnus, nullâ condimentorum ope egens, et sitis modica, et concoctio omnis escæ facilis et bona, sine ructu aut ventriculo ullo modo gravato; et excretio per alvum naturalis, quotidiana, et urina justum tempus facilè retenta, et cum tempus demùm sit, facilè reddita; et quamvis varii coloris et crassitudinis et copiæ (pro ratione cibi potusque) sedimentum idoneum suo tempore deponens; quo tardiùs, eo ferè

lenta, parùm perspecta, neque multum accelerata ab quavis exercitatione, et vox fortis et sonora, et gravis in viris, haud facilè facta rauca; et gratus halitus oris saltem carens[13] *omni fætore et os humidum, et lingua nitida verò non nimis rubra, et magnus appetitus cibi egens*[13] *nullâ ope condimentorum, et sitis modica, et concoctio facilis et bona omnis escæ, sine ructu aut ventriculo gravato ullo modo; et excretio naturalis quotidiana per alvum, et urina facilè retenta (per) justum tempus et facilè reddita cum sit demùm tempus; deponens suo tempore idoneum sedimentum, quamvis (sit) varii coloris et crassitudinis (pro ratione cibi que*

moist mouth, a clean tongue, but not too red; a great appetite, requiring no sauces, moderate thirst, and easy and good digestion of every kind of food, without flatulence or oppression of the stomach in any degree; a daily and natural alvine evacuation, and urine easily retained a proper time, and as easily repelled at the proper period, depositing in due time its proper sediment, although of varied colour and thickness, according to the nature of the food and drink, the sooner (it takes place) the better; a free and constant cutaneous exhalation, not to sweating, unless powerful causes concur (to produce it); the internal secretions likewise constant and free, neither in excess nor too scanty.

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13. Verbs of abounding, &c. and the opposite ones, expressing want, govern the ablative case.

meliùs; et exhalatio per cutem libera et constans, citra verò sudorem nisi validæ causæ concurrant; et secretiones internæ pariter constantes et liberæ, neque nimiæ neque nimis parcæ. —Sani denique hominis est Venerem appetere, et ad eam valere et sobolem procreare.—Fæminis verò sanitas quædam singularis et propria est, quippe quæ partes quasdam habeant, muneribusque fungantur a virilibus multùm diversis. Harum, igitur, inter sanitatis signa notare oportet, æquabilem et liberum mensium fluxum, neque nimium neque nimis parcum; et graviditatem felicem, et partum facilem, et, quo decet tempore, copiosam boni lac-

potûs); quo tardiùs, ferè eo meliùs; et exhalatio libera et constans per cutem verò citra sudorem nisi validæ causæ concurrant; et secretiones internæ pariter constantes et liberæ, neque nimiæ, neque nimis parcæ.—Denique est[14] *(pars) sani hominis appetere Venerem et valere ad eam, et procreare sobolem.—Vero est quædam sanitas singularis et propria fæminis, quippe quæ habeant quasdam partes quæ fungantur muneribus multùm diversis a virilibus. Igitur inter signa sanitatis harum oportet notare æquabilem et liberum fluxum mensium neque nimium neque nimis parcum; et graviditatem felicem et partum facilem et secrétionem copiosam boni lactis,*

It is finally the province of a healthy man to desire sexual intercourse, to be competent to it, and to procreate offspring. But there is a certain kind of health peculiar and belonging to women, inasmuch as they have certain parts which perform functions differing considerably from those bestowed upon men. Therefore, amongst their characters of health, it is necessary to observe a regular and free discharge of the menses, neither in excess nor too scanty, (also) a favorable state of pregnancy, easy labour, and a plentiful secretion of good milk, at the season in which it is required. Moreover, it is a character of a healthy and strong body of either sex, that it has not only performed its functions well,

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14. *Sum*, implying the duty of a thing, requires the genitive case

tis secretionem.—Præterea, sani et validi corporis utriusque sexus est, non modò suis, nihil impediente, probè functum esse muneribus, sed, tenacis prosperæ suæ valetudinis, multis, cœli, victûs, vitæ generis, varietatibus semet accommodasse, et sic plurimas morborum causas impunè tolerasse, quales minùs firmum aut sanum corpus vel prorsùs fregissent, vel saltèm in grave valetudinis discrimen perduxissent. — Postremò, sanitas eidem homini quamvis semper sanissimo non prorsùs eadem est. Plurimæ enim et gravissimæ varietates corporis ab ætate omninò pendent: nec quisquam hominum ab aliis ejusdem ætatis tantùm dif-

quo tempore decet.—Præterea (signum) est sani et validi corporis utriusque sexus non modo probè functum esse suis muneribus, nihil impediente sed (signum est) suæ tenacis prosperæ valetudinis illud (i. e. corpus) accommodasse semet multis varietatibus, cœli, victûs, generis vitæ, et sic tolerasse impunè plurimas causas morborum, quales (causæ) vel prorsùs fregissent corpus minùs firmum vel sanum vèl saltem perduxissent in grave discrimen valetudinis.—Postremò sanitas non est prorsus eadem eidem homini quamvis sanissimo. Enim plurimæ et gravissimæ varietates corporis pendent omninò ab ætate; nec quisquam hominum tantùm differt ab aliis

when nothing is impeding it, but it is a (mark) of its tenacious good health, that it has accommodated itself to the different varieties of the atmosphere, food, and mode of life, and has thus born with impunity such causes of diseases, as would have entirely broken down a body less firm or healthy, or would at least have brought it into great danger. Lastly, health is not entirely uniform in the same person, although always very healthy. For many, and most important changes of the body, depend entirely upon the age; nor does any man differ from other individuals so much, as he differs from himself at the different periods of his life, whether we look to his figure, the powers of the body, the energies of the mind, or lastly, we inquire into

fert, quantùm variis vitæ temporibus a se ipso discrepat; sive formam spectemus, sive corporis vires, sive animi dotes, sive demùm intima corporis penetralia muneraque ab iis pendentia perscrutemur. Quo fit, ut valetudo quam perfectissima, quæ corpus parvum et tenerum ad suum vigorem et perfectionem primò perduxit, et diu in hoc statu sustinuit, idem paulatim minuat, et tandem ad finem perducat; nam

"*Nascentes morimur, finisque ab origine pendet.*"

20. Harum rerum, quæ omnes ad sanum corpus pertinent, cognitio, Physiologia corporis humani vocatur.

21. Verùm enimverò, homo, non modò certo, se-

(hominibus) ejusdem ætatis, quantùm discrepat a se ipso (in) variis temporibus vitæ; sive (nos) spectemus formam, sive (spectemus) vires corporis, sive dotes animi, sive demùm perscrutemur intima penetralia corporis que munera pendentia ab iis. Quo fit, ut valetudo quam perfectissima quæ primò perduxit corpus parvum et tenerum ad suum vigorem et perfectionem, et sustinuit (illud) diù in hoc statu, idem minuat paulatim et perducat tandem ad finem; nam

"Morimur nascentes, que finis pendet ab origine."

20. *Cognitio, harum rerum, quæ omnes (res) pertinent ad sanum corpus, vocatur Physiologia humani corporis.*

21. *Verùm enimverò, homo non modo nascitur, cres-*

the inward recesses of the body, and the functions depending upon them. Hence it is, that the most perfect health, which first conducted the small and tender body to its vigor and perfection, and long supported it in this state, by degrees reduces it, and at last conducts it to its termination, for scarcely born we die, and the end is connected with the beginning.

20. The knowledge of these things, all of which have reference to the healthy body, is called, the Physiology of the human body.

21. But indeed, man is not only born, grows up, is

cundum Naturæ leges, tempore nascitur, crescit, viget, senescit, moritur; sed variis quòque, propè innumeris, morbis obnoxius fit, qui formam quamvis pulchram corrumpant, vires frangant, singulas corporis actiones impediant, corpus sæpè gravibus doloribus excrucient, neque ipsi pepercerint "*Divinæ particulæ auræ.*"

cit, viget, senescit, (et) moritur certo tempore secundum leges Naturæ; sed (ille) quoque fit obnoxius variis morbis prope innumeris qui corrumpant formam quamvis pulchram, (qui) frangant vires, (qui) impediant singulas actiones corporis (qui) sæpe excrucient corpus gravibus doloribus neque pepercerint[15] *ipsi* "particulæ Divinæ auræ."

22. Horum alii infantem, ferè nascentem, adoriuntur, nec raro extinguunt. Alii juvenem viribus fidentem potiùs invadunt, nunc citâ morte rapiunt, nunc lentâ tabe consumunt; dum alii labentis ætatis semitam màgis obsident, quâ corpus, debile, exhaustum, prælio

22. *Alii horum (morborum) adoriuntur infantem ferè nascentem, nec raro extinguunt (illum). Alii potiùs invadunt juvenem fidentem (suis) viribus, nunc rapiunt (illum) citâ morte, nunc consumunt (illum) lentâ tabe; dum alii (morbi) magis obsident semitam æta-*

vigorous (then) becomes old and dies at a certain time, according to the laws of Nature; but he is also exposed to various and nearly numberless diseases, which destroy his form, though so beautiful, which break down its strength, impede its separate actions, and often torment the body with excruciating pains, nor will spare the mind itself, "that particle of Divine essence."

22. Some of these diseases assault the infant at birth, nor unfrequently destroy him; others rather attack the youth, confident of his strength; at one time they snatch him away by sudden death, at another time they destroy him by slow consumption; whilst other diseases rather beset the path of declining age, when they more easily weigh down the body,

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15. *Parco peperci* governs a dative case.

impar, faciliùs opprimant, vel, si non statim oppresserint, longâ valetudine macerent, donec tandem vita prorsùs inops et miseranda cum optandâ morte commutetur.

tis labentis, quâ facilius opprimant corpus, debile, exhaustum impar prælio; vel si non statim oppresserint, macerent longâ valetudine donec tandem vita prorsùs inops et miseranda commutetur cum optandâ morte.

23. Tot tamque variorum graviumque morborum multas oportet esse causas; quarum naturæ et sedis et effectuum et modi, quo corpus humanum afficiant, scientia, Pathologia vocatur. Hæc vero est vel generalis vel specialis; quarum prioris tantùm hic traduntur principia.

23. *Oportet causas tot tamque variorum graviumque morborum esse multas; scientia naturæ quarum (causarum) et sedis et effectuum et modi quo afficiant corpus humanum, vocatur Pathologia. Vero hæc (Pathologia) est vel generalis vel specialis; principia prioris quarum tantùm hic traduntur.*

24. Morbus adest, quum corpus tantùm a statu sano deflexerit, ut solitæ actiones vel prorsùs impediantur vel ægrè aut cum dolore perfi-

24. *Morbus adest, quum corpus tantùm deflexerit a statu sano, ut solitæ actiones impediantur vel prorsùs, vel perficiantur ægrè aut cum*

weak, exhausted, and unequal to the contest; or if they have not immediately overcome him, they waste him away by long recovery, until at last his life, quite helpless and wretched, is exchanged for a hoped-for death.

23. It is necessary that the causes of so many, so various and severe diseases should be numerous; a knowledge of their nature and situation and manner in which they affect the human body, is called Pathology. This Pathology is either general or special: the principles of the former only are treated of here.

24. Disease is present, when the body has so much declined from the healthy state, that the customary actions of the body are either entirely suspended or performed with

ciantur. Tunc dicitur homo ægrotare.—Unicuique corporis parti, tam fluidæ quam solidæ, unicuique functioni, sua accidere possunt vitia. Hæc verò vel singula occurrunt vel plura simul juncta. Hinc morbi simplices vel compositi.

25. Simplicissimi exemplum erit, si quælibet corporis partes ruptæ, vel quovis alio modo læsæ, propriis muneribus minùs idoneæ factæ fuerint: aut si, salvâ omninò singularum partium fabricâ, ipsæ, sive solidæ sive fluidæ, a statu sano aberraverint: veluti si, propriis amissis vel corruptis dotibus, alias et fortasse noxias sibi adeptæ sint; vel denique si vires moventes, aut nimiæ, aut

dolore.—Homo tunc dicitur ægrotare. Sua vitia possunt accidere unicuique parti corporis, tam fluidæ quam solidæ, (et) unicuique functioni. Verò hæc occurrunt vel singula, vel plura simul juncta. Hinc (sunt) morbi simplices vel compositi.

25. *Erit exemplum simplicissimi (morbi) si quælibet partes corporis ruptæ, vel læsæ quovis alio modo fuerint factæ minùs idoneæ propriis muneribus; aut si, fabricâ partium singularum omnino salvâ, ipsæ (partes) sive solidæ sive fluidæ aberraverint a statu sano; veluti si, dotibus propriis amissis vel corruptis, (illæ partes) adeptæ*[16] *sint sibi alias et fortasse noxias: vel denique si vires moventes fuerint nimiæ*

difficulty or pain. Man is in that state said to be ill. Its own peculiar injuries may happen to every part of the body whether fluid or solid, and to every function. These again occur singly or many united together. Hence there are simple or compound diseases.

25. There will be a specimen of a most simple case of disease, if any parts of the body, by being torn or injured in any other way, become less fitted for their proper functions; or if, the structure of individual parts being quite sound, the solids or fluids themselves have deviated from the healthy state: for example, if, their own qualities being lost or corrupted, they have acquired others, perhaps injurious;

16. *Adeptæ*, from *adipiscor*.

nimis parvæ fuerint, aut contra Naturæ normam directæ.

26. Hujusmodi verò morbos rarissimè spectamus, ferè solâ mentis acie attingimus; quippe nimirùm simplicissimi etiam, alios sive morbos, sive morborum indicia seu *symptomata* gignant, et his solis dignoscantur. Symptomata vel morbi indicia sunt singulæ quæ in ægro præter naturam observantur res; illorum verò præcipua, evidentissima, constantissima, morbum faciunt, definiunt; alia alia producentia, prima ab ipsâ morbi causâ provenientia.

27. Varia profectò et propè innumera in ægris observantur morborum signa,

vel nimis parvæ, aut directæ contra normam Naturam.

26. *Verò rarissimè spectamus morbos hujusmodi, ferè attingimus solâ acie mentis; quippe nimirùm etiam simplicissimi, sive gignant alios morbos, sive (gignunt) indicia seu* symptomata *morborum, et dignoscantur ab his. Symptomata vel indicia morbi sunt singulæ res quæ observantur in ægro præter naturam; verò (symptomata) præcipua, evidentissima, constantissima faciunt (et) definiunt morbum; alia producentia alia, prima provenientia ab ipsâ causâ morbi.*

27. *Profectò varia et propè innumera signa morborum observantur in ægris,*

or lastly, if the moving powers be too great, or too feeble, or directed contrary to the rule of Nature.

26. We very rarely see diseases of this kind, we generally reach them by the acuteness of the mind alone; for indeed, even the most simple diseases give rise either to other diseases or signs or symptoms of diseases, and are distinguished by them. Symptoms or signs of disease are all those circumstances which are observed in the sick man, as unnatural; but the principal, most evident, and most constant symptoms, form and define a disease; some giving rise to others, and the first arise from the cause of disease itself.

27. Indeed many and nearly numberless signs of diseases are observed in sick people; a knowledge of them will be

quorum notitia, tum ad cognoscendos, tum quoque ad sanandos vel levandos morbos, medicinam facientibus imprimis utilis erit. Immensa verò talium signorum varietas haud ineptè ad tria genera seu capita referri solet; functiones, scilicet, impeditas; sensus sive perceptiones molestas; et speciem aliasque corporis qualitates manifestas, vel quæ sensibus percipiuntur, mutatas aut vitiatas. Omnis nimirùm morbus in læsâ aliquâ functione maximè consistit (24): harum verò nulla ferè lædi vel impediri potest, quin brevi molestiam quandam ægro facessat, quâ sciat se malè ha-

notitia quorum (signorum) erit utilis imprimis facientibus medicinam, tum ad cognoscendos[17] (morbos), tum quoque ad sanandos[17] vel levandos[17] morbos. Verò immensa varietas talium signorum solet referri haud ineptè ad tria genera seu capita; scilicet (ad) functiones impeditas; (ad) sensus sive perceptiones molestas; et (ad) speciem que alias qualitates corporis mutatas aut vitiatas manifestas, vel quæ percipiuntur sensibus. Nimirùm omnis morbus maximè consistit in aliquâ læsâ functione. Verò nulla harum (functionum) ferè potest lædi vel impediri, quin brevi (tempore) facessat quandam molestiam ægro,

especially useful to the medical practitioner, both in discovering diseases, and in curing or relieving them. The immense variety of such symptoms is accustomed to be referred, not improperly, to three genera or heads, namely, impeded functions, troublesome sensations or perceptions, change and disorder of appearance, and other qualities of the body, which are evident or perceived by the senses. Every disease principally consists in injury of some function; for none of the functions can commonly be injured or impeded, without in a short time producing some uneasiness to the sick man, so that he knows that he is not well; nor in common cases can any one be long ill, without

17. *Gerunds* are sometimes converted into nouns adjective, as *ad sanandos morbos, &c.*

bere. Nec quisquam ferè diù ægrotare potest, quin species et forma corporis, et vultûs color decens, quæ prosperæ valetudini contingere solent, eandemque tam pulchrè depingere (19) plùs minùsve corrumpantur.

quâ sciat se malè habere (se). Nec quisquam ferè diù potest ægrotare, quin species et forma corporis, et color decens vultûs, quæ solent contingere prosperæ valetudini que (solent) depingere eandem tam pulchrè, corrumpantur plus minùsve.

28. Medico, igitur, inter adversæ valetudinis indicia imprimis notanda sunt læsarum functionum animalium signa; sensûs, scilicet, motûsque voluntarii malè se habentium indicia. Singuli enim sensus externi variis possunt vitiari modis, et reverà sæpè vitiantur; nempè aut deficiunt et torpent, aut nimis acuti fiunt, nec sine molestiâ exercendi, aut abnormes fiunt et depravantur. Sensus porrò interni sæpè a morbis afficiuntur. Hujusmodi verò

28. *Igitur signa animalium functionum læsarum imprimis notanda sunt inter indicia adversæ valetudinis; scilicet, indicia sensûs que motûs voluntarii habentium se malè. Enim singuli sensus externi possunt vitiari variis modis et reverè sæpe vitiantur; nempè (sensus) aut deficiunt et torpent, aut fiunt nimis acuti, nec exercendi (sunt) sine molestiâ, aut fiunt abnormes et depravantur. Porro sensus interni sæpe afficiuntur à morbis. Vero affectiones*

alteration in the appearance and form of his body, and in the comely colour of his face, which are generally the attendants upon good health, and which give it so fair an appearance.

28. Therefore the character of impaired animal functions are especially to be observed amongst the symptoms of bad health; namely, indications of sensation and voluntary motion being disordered. For all the external senses may be disordered in various ways, and are in truth often impaired; they are either defective and torpid, or are too acute, and do not allow exercise without uneasiness, or become irregular and depraved. Besides, the internal senses are often affected by diseases. But of all diseases of the senses,

omnium sensuum affectiones medici attentionem optimo jure sibi vindicant, quatenùs non modò ipsæ haud levis momenti morbi interdùm fiant, sed quantum naturam et augmentum vel remissionem aliorum graviorumque morborum sæpè quam optimè ostendant.

29. Par ratio est cur ad conditionem et læsiones facultatis movendi semper sit respiciendum; sive illa defecerit, ut in omnibus ferè morbis solet, quod debilitas vocatur; vel perdita fuerit, ut in paralysi; vel præter naturam intensa, quod in quibusdam cerebri affectionibus nonnunquam accidit; sive demùm abnormis fuerit, veluti in convulsionibus aliisque similibus morbis.

hujusmodi omnium sensuum, vindicant sibi optimo jure attentionem medici, quatenùs non modo (affectiones) ipsæ fiant morbi haud levis momenti, sed quantum sæpè, quam optimè ostendant naturam, et augmentum, vel remissionem aliorum que graviorum morborum.

29. *Est par ratio, cur semper respiciendum sit ad conditionem et (ad) læsiones facultatis movendi; sive illa (facultas) defecerit, ut solet ferè in omnibus morbis, quod vocatur debilitas vel (illa facultas) fuerit perdita ut in paralysi; vel (sive illa sit) intensa præter naturam, quod nonnunquam accidit in quibusdam affectionibus cerebri; sive demùm (illa) fuerit abnormis, veluti in convulsionibus que (in) aliis morbis similibus.*

affections of this description by the greatest right claim the attention of the physician, inasmuch as they are not only diseases in themselves of no light importance, but they also frequently point out in the best possible manner the nature and progress and remission of other and more severe diseases.

29. There is equal reason why we must always look to the condition and injuries of the faculty of motion, whether it be defective, as is usual in nearly all diseases, and is called debility, or whether it be lost, as in paralysis, or whether it be unnaturally powerful, as it occurs sometimes in certain cerebral affections, or lastly, whether it be irregular as in convulsions and other like diseases.

30. Neque sanè ægri conditio quod ad somnum negligi debet: qui, sive ipse pro functione corporis, sive tantum pro vacatione ab aliis functionibus habendus sit, modum suum naturalem et sanitatis legibus consentaneum habet, qui modus in plerisque morbis haud parùm turbari solet; ita ut somnus vel nullus sit vel nimius vel interruptus vel diris somniis terrificus; neque somnus qui fuerit ægrum ut decet recreet.

30. Neque sanè conditio ægri debet negligi quod (refert) ad somnum; qui sive ipse sit habendus pro functione corporis sive tantùm (habendus est) pro vacatione ab aliis functionibus, habet suum modum naturalem et consentaneum legibus naturæ, qui modus solet turbari haud parùm in plerisque morbis; ita ut somnus sit vel nullus vel nimius vel interruptus vel terrificus diris somniis, neque somnus qui fuerit, recreet ægrum ut decet.

31. Signa autem læsarum vel malè se habentium functionum vitalium majoris adhuc momenti sunt; scilicet quæ non modò morbi naturam et ægri statum benè ostendant, sed suo quoque periculo, vehementiora saltem si fuerint, non careant.

31. Autem signa functionum vitalium læsarum vel malè habentium se, sunt adhuc majoris momenti; scilicet (sunt illa) quæ non modò benè ostendant naturam morbi et statum ægri, sed quoque non careant suo periculo, si saltem fuerint

30. Nor indeed should the state of the patient be neglected in reference to sleep, which, whether it be considered a function of the body, or an intermission of the other functions, has its own natural mode, according with the laws of health; which mode is deranged considerably in many diseases. So that sleep may be wanting, or excessive, or interrupted by frightful dreams, nor can sleep so obtained be refreshing to the patient in a due degree.

31. The signs of injured or deranged vital functions are of still greater importance; for they are those which not only will point out the nature of the disease and state of the patient, but are also not free from danger themselves,

Hujusmodi sunt omnes pulsuum varietates, nimirum quæ ostendant aut deficere sanguinis motum, aut nimium, aut abnormem esse, veluti in febribus, inflammationibus, animi defectionibus.

vehementiora. Hujusmodi sunt omnes varietates pulsuum, nimirum quæ ostendant aut motum sanguinis deficere, aut esse nimium aut abnormem, veluti in febribus, (in) inflammationibus, (et in) defectionibus animi.

32. Proximum his locum tenent non immeritò spiritûs affectiones morbidæ, veluti omnis spirandi velocitas aut tarditas insolita, aut difficultas quævis, aut tussis, sternutatio, suspirium et similia; quibus fortassè adjicere licet varias vocis affectiones, quamvis profectò hæ potius ad primum (29) genus pertineant.

32. *Morbidæ affectiones spiritûs non immeritò tenent proximum locum his, veluti omnis velocitas vel insolita tarditas spirandi, aut quævis difficultas, aut tussis, sternutatio, suspirium et similia; quibus (affectionibus) fortasse licet adjicere varias affectiones vocis, quamvis profectò, hæ potius pertineant ad primum genus.* (29)

33. Porrò signa læsarum actionum naturalium (9) sedulò observanda sunt; famis, scilicet, aut sitis de-

33. *Porrò signa læsarum actionum naturalium*(9)*sunt observanda sedulò; scilicet, defectus, excessus, deprava-*

provided they be of a rather more violent character. Of this description are the various kinds of pulses; for instance, such as show that the circulation of the blood is languid, or too rapid, or irregular, as in fevers, inflammations and faintings.

32. Morbid affections of respiration properly claim attention in the next place, such as unusual velocity, or retardation, or any difficulty of breathing, or cough, sneezing, sighing and the like; to which, perhaps, may be added various affections of the voice, although indeed these may rather be referred to the first kind of affections. (29)

33. Moreover the signs of injured natural functions are carefully to be observed; such as for instance, deficiency,

fectus, excessus, depravatio, conditio quævis insolita; actionis mandendi et devorandi et concoctionis varia vitia; et alvi status vel astrictæ præter naturam vel nimis solutæ; et secretionum, et quæ, magis sub nostris sensibus cadunt, excretionum, præsertim urinæ et sudoris excessus, defectus, difficultas, depravatio. —Neque sanè negligendæ sunt læsiones functionum utrique sexui, muliebri imprimis, propriarum.

34. Quod ad sensus ingratos vel molestos (27) pertinet; frequentissimi morborum comites et signa observantur; quorum pauci aliquâ saltèm molestiâ carent. Non aliter enim ac sanus suis facilè, nec sine

tio, (vel) quævis insolita conditio famis aut sitis; (scilicet) varia vitia actionis mandendi et devorandi, et concoctionis; et status alvi, vel astrictæ præter naturam, vel (alvi) nimis solutæ; et excessus, defectus, difficultas depravatio secretionum, et excretionum præsertim urinæ et sudoris, quæ (excretiones) magis cadunt sub nostris sensibus.—Nequè sanè læsiones functionum propriarum utrique sexui, imprimis muliebri, sunt negligendæ.

34. *Quod pertinet ad sensus ingratos vel molestos; (sensus ingrati et molesti) observantur frequentissimi comites et signa morborum, pauci quorum (morborum) saltem carent aliquá molestiâ. Enim (homo) non aliter ac sanus fungitur suis*

excess, depravation, or any unusual condition of hunger or thirst; such as the various disorders of the action of mastication, deglution, and digestion; the state of the bowels, whether confined more than natural or relaxed; such as the excess or deficiency, a difficulty or depravation of the secretions and excretions, particularly of the urine and sweat, which fall most under our observation. Nor indeed are the injuries of the functions peculiar to each sex, especially the female, to be overlooked.

34. As to troublesome and uneasy sensations, they are very often observed to be attendants and symptoms of diseases, and indeed few of them are free from some degree of uneasiness. For man when healthy performs his numerous

voluptate quâdam, plerisque fungitur muneribus; sic æger, his impeditis, dolet, angitur variisque molestiis afficitur. Igitur ad hoc caput pertinent, dolor, anxietas, pruritus, sensusque lassitudinis, torporis, stuporis, caloris, frigoris, ponderis, et alii forsitàn benè multi sensus ingrati, nausea, vertigo, tinnitus, &c. quos medicis aliò relegare placuit: quorum omnium tanta vis et molestia est, ut magnam sæpè morbi partem efficiant, et ægros miserrimè agitent, fatigent, torqueant, terreant, tandem morte ipsâ terribiliores evasuri. Neque profectò periculo aliquo semper carent tales sensus molesti,

plerisque muneribus facilè, nec sine quâdam voluptate; sic æger his (muneribus) impeditis, dolet, angitur, que afficitur variis molestiis. Igitur (hæc) pertinent ad hoc caput (scilicet) dolor anxietas, pruritus, que sensus lassitudinis, torporis, stuporis, caloris, frigoris, ponderis, et forsitàn benè multi alii sensus ingrati (scilicet) nausea vertigo, tinnitus, &c. quos placuit medicis relegare aliò; omnium quorum (sensuum) tanta est vis et molestia ut sæpè efficiant magnam partem morbi et miserrimè agitent ægros, fatigent, torqueant, terreant tandem evasuri terribiliores[18] *morte ipsâ. Neque profectò tales*

functions with ease, and not without some degree of pleasure; but the sick man, when these functions are impeded, is in pain, fretted and affected with various uneasinesses. Therefore to this head belong pain, anxiety, itching, a sensation of weariness, languor, stupor, heat, cold, weight, and perhaps many other unpleasant sensations, such as nausea, vertigo, ringing of the ears, &c. which it has pleased medical men to place elsewhere; such is the influence and trouble of such sensations, that they often form a great part of the disease, and most frightfully agitate, fatigue, torment, and frighten those who are ill, and at last become more terrible than death itself. Nor, indeed, are such uneasy sensations free from danger, whatever may have been the causes of them.

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18. Comparatives, when the sense is rendered complete by *quam*, require the ablative case after them, as *terribilior morte, i. e. quam mors.*

qualescunque fuerit eorum causæ.

35. Ad tertium genus signorum morbidorum (27), corporis nimirùm qualitates manifestas vitiatas, referuntur res omnes in ægro præter naturam observandæ, neque ad alia genera pertinentes, de quibus nostris sensibus, non ægri dictis aut querelis, certiores fimus. Cujusmodi sunt, color corporis et præsertim vultus vitiatus, et præter solitum pallidus, ruber, flavus, fuscus, lividus, varians; peculiaris quoque vultus aspectus, ab actione musculorum, aut motu sanguinis, et sæpè a statu animi pendens, nullisque describendus verbis, qui tamen ægri conditionem,

sensus molesti semper carent aliquo periculo,[19] *qualescunque fuerint causæ eorum.*

35. *Ad tertium genus signorum morbidorum nimirùm (ad) qualitates manifestas corporis vitiatas, referuntur omnes res, observandæ in ægro præter naturam, neque pertinentes ad alia genera de quibus fimus*[20] *certiores*[20] *nostris sensibus non dictis aut querelis ægri. Cujusmodi (generis) sunt, color corporis et præsertim vultûs, vitiatus, et pallidus præter solitum, ruber, flavus, fuscus, lividus, varians; quoque peculiaris aspectus vultûs, pendens ab actione musculorum, aut (ab) motû sanguinis, et sæpe a statû animi, que describendus nullis verbis, tamen qui depingit meliùs et certiùs omni*

35. To the third kind of morbid signs, such as visible vitiated qualities of the body, are referred all those circumstances observed in a sick man as unnatural, nor belonging to the other genera, (but) of which we are informed by our own senses, (and) not by the words and lamentations of the patient. Of this description are a vitiated colour of the body, especially of the countenance, paler than natural, (or) red, yellow, brown, livid or changeable; (there is) also a peculiar appearance of the countenance, depending upon the action of the muscles, or circulation of the blood, and often upon a state of mind, which cannot be described by

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19. Verbs of abounding, and the reverse of them, govern the ablative case, as *carent periculo.*
20. *Fio certior,* to be informed, or made acquainted with.

quod ad vires vitæ, et morbi levamen aut augmentum, omni sermone meliùs et certiùs depingit, nunquam negligendus: Variæ imprimis oculorum conditiones, languor et hebetudo, aut rubor, aut splendor, aut ferocitas insolita, eorumque præter solitum distortio, et aliæ species morbidæ, veluti si excavati sunt, vel alter vel uterque clauditur, vel alter altero major apparet non ita solitus. Sedulò quoque observandæ sunt oris et præsertim linguæ conditiones, rubræ, albidæ, sordidæ, nigricantis, aridæ, quæ præsentes morbum demonstrant; decedentes aut in melius versæ, eundem decedentem sæpè ostendunt. Quin et odores varii morbidi naturam morbi ali-

sermone conditionem ægri (in illo) quod (pertinet) ad vires vitæ et levamen aut augmentum morbi: Imprimis variæ conditiones oculorum, (scilicet) languor et hebetudo, aut rubor aut splendor, aut ferocitas insolita que distortio eorum, præter solitum; et aliæ species morbidæ, veluti si sunt excavati, vel alter (oculus) vel uterque clauditur, vel alter apparet major altero non ita (ut) solitus. Quoque conditiones oris et linguæ sunt sedulò observandæ, (an sint) rubræ, albidæ, sordidæ, nigricantes, aridæ, quæ præsentes demonstrant morbum; decedentes aut versæ in meliùs sæpè ostendunt eundem (morbum esse) decedentem. Quin et varii morbidi odores aliquando

any terms, but which depicts better and more truly than all language, the state of the sick man in reference to the powers of life, and the decrease or increase of the disease. (Such are) particularly different states of the eyes; for instance, such as heaviness and dullness, redness or brightness, or unusual ferocity or distortion of them beyond what is natural, also other morbid appearances, as when they are sunk, or one or both eyes are closed, and one appears unnaturally larger than the other. Also the states of the mouth and tongue are carefully to be examined, whether they are red, white, furred, blackish, or dry, which (states) when present indicate disease, but disappearing or changed for a better appearance, show that that disease is yielding. Besides, various morbid

quandò detegunt, et ideò observari merentur: odor, scilicet, sive fætor insolitus halitûs pulmonis vel cutis, vel excretionum sigularum, vel universi corporis, vel partis ejus cujusvis, veluti in carcinomate, *variola*, morbis putridis. Multæ quòque, quæ tactu maximè percipiuntur, qualitates corporis vitiatæ, calor, frigus, durities vel rigiditas, mollities, humiditas, siccitas, crassitudo, tenuitas, tumor, macies, vel universi corporis vel partium singularum, omni curâ observari debent. Ad hujusmodi autem qualitatum manifestarum corporis vitia eo màgis attendere decet, quia facilè observentur, et minimè fallacia sint, neque æger ea medicum celare

detegunt naturam morbi, et ideò merentur observari; scilicet odor sive fætor insolitus halitûs pulmonis vel cutis, vel singularum excretionum, vel universi corporis, vel partis cujusvis ejus, veluti in carcinomate, variolâ, et in morbis putridis. Quòque multæ qualitates vitiatæ corporis, quæ maximè percipiuntur tactu, (scilicet) calor, frigus, durities vel rigiditas, mollities, humiditas, siccitas, crassitudo, tenuitas, tumor, macies, vel universi corporis vel singularum partium debent observari omni curâ. Eo magis decet attendere ad vitia qualitatum manifestarum corporis hujusmodi, quia (illa vitia) facilè observentur et sint minimè fallacia, neque æger possit

odours sometimes detect the nature of the disease, and on that account are worthy of observation; for instance, an odour, or unusual fætor of the pulmonary or cutaneous exhalation, or of the different secretions, or of the body generally, or of some part of it, as in carcinoma, small-pox, and in putrid diseases. Also many vitiated qualities of the body, which are principally perceived by the touch; (such as) heat, cold, hardness, or stiffness, softness, moisture, dryness, thickness, thinness, swelling, emaciation, either of the whole body, or of the separate parts, ought to be observed with every possible care. It is so much the more proper to attend to this description of disorders of the evident qualities of the body, because they are easily seen, and are by no means fallacious, nor can the patient conceal them from the

possit, neque, ut rem intelligat medicus, multis, quæ sæpè admodùm ingratæ sunt, opus sit interrogationibus.

36. *Causa* multifariam dicitur apud medicos cum de morbis disserunt; et sensu profectò aliquantùm diverso ab eo quo hoc vocabulum usurpari solet, vel in scriptis philosophorum, vel in communi hominum sermone. Varios, igitur, medicos sensus vocabuli *causæ*, vel usitatissimos saltem, unumquemque medicinæ studio incumbentem scire oportet.

37. Distinguunt imprimis medici morbi causas in *proximam* et *remotas; remotas* iterum in *prædispo-*

celare[21] *ea*[21] *medicum*[21], *neque, ut medicus intelligat rem, opus sit multis interrogationibus, quæ sunt sæpè admodùm ingratæ.*

36. *Causa dicitur multifariam, apud medicos, cùm disserunt de morbis; et profectò (in) sensu aliquantùm diverso ab eo, quo (sensu) hoc vocabulum solet usurpari, vel in scriptis philosophorum, vel in communi sermone hominum. Igitur oportet unumquemque incumbentem studio medicinæ scire varios medicos sensus vocabuli causæ, vel saltem usitatissimos (sensus).*

37. *Imprimis medici distinguunt causas morbi in proximam et remotas; iterum (distinguunt) remotas*

medical man; neither, in order to understand the disease, is there need of many questions, which are frequently very unpleasant.

36. Cause is described as of several kinds by medical men when they treat of diseases; and, indeed, in a sense somewhat different from the common acceptation of this term in the writings of philosophers or in common discourse. Therefore it is necessary that every one studying medicine should know the various medical meanings of the word cause, or at least of those most in use.

37. In the first place physicians distinguish the causes of diseases into proximate and remote, and again the remote

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21. Verbs of teaching and concealing, &c. frequently govern two accusative cases after them, as *docebo te istos mores, non potest celare ea medicum.*

nentes et *occasionales* vel *excitantes* vel *potentias nocentes*.

38. Causa *proxima*, ut definiunt scriptores medici, est illa quæ præsens morbum facit, sublata tollit, mutata mutat.

39. Causa *prædisponens* est illa quæ corpus tantùm morbo opportunum reddit; scilicet ut admotâ causâ excitante in morbum incidat.

40. Causa demùm *occasionalis* vel *excitans* est ea quæ in corpore jam proclivi facto (39) morbum excitat.

41. Corrigenda, igitur, est corporis conditio quæ morbo obnoxium facit; evitandæ causæ remotæ quæ morbum excitant; tollenda proxima morbi causa; et mitiganda

in prædisponentes et occasionales, vel excitantes vel potentias nocentes.

38. Causa proxima, ut scriptores medici definiunt (eam) est illa quæ præsens facit morbum, sublata tollit, mutata mutat.

39. Causa prædisponens est illa quæ tantùm reddit corpus opportunum morbo; scilicet ut, causâ excitante admotâ, (corpus) incidat in morbum.

40. Demùm causa excitans vel occasionalis est ea quæ excitat morbum in corpore jam facto proclivi (39).

41. Igitur conditio corporis quæ facit (corpus) obnoxium morbo, est corrigenda: causæ remotæ, quæ excitant morbum, sunt evitandæ; proxima causa morbi

causes into predisposing and occasional, or exciting and noxious powers.

38. Proximate cause, as physicians define it, is that which when present constitutes disease, which when removed takes it away, and which when altered changes it.

39. A predisposing cause is that which only renders the body liable to disease; that is in such a way, that, an exciting cause being applied, the body may fall into disease.

40. Lastly, the exciting or occasional cause is that which excites disease in a body already predisposed to it.

41. Therefore the state of the body, which renders it obnoxious to disease, is to be corrected; the remote causes, which excite disease, are to be avoided; the proximate cause of the disease is to be removed; and the different symptoms

singula ejusdem indicia quæ maximè molesta sunt. Sic morbi præcaventur, sanantur, levantur.

(est) tollenda; et singula indicia ejusdem, quæ sunt maximè molesta, sunt mitiganda. Sic morbi præcaventur, sanantur (et) levantur.

42. Causa remotior, quæ proclivitatem tantùm ad morbos facit, in ipso corpore semper hæret, licet sæpè extrinsecùs primam originem duxerit: causa verò excitans vel intùs vel extrinsecùs esse potest. Concurrente utrâque fit morbus, quem neutra sola efficere potest. Neque enim in omni homine omnis causa morbi excitans morbum facit; neque omnes qui jam ad morbos proclives facti sunt, nullâ admotâ causâ excitante, in morbos incidunt.

42. *Causa remotior, quæ facit tantùm proclivitatem ad morbos, semper hæret in ipso corpore, licet sæpè duxerit originem primam extrinsecus; verò excitans (causa) potest esse vel intùs vel extrinsecùs. Utrâque (causâ) concurrente morbus fit, quem morbum neutra (causa) sola potest efficere. Enim neque in omni homine omnis causa excitans morbi facit morbum; neque omnes (homines) qui jam sunt facti proclives ad morbos, nullâ causâ excitante admotâ, incidunt in morbos.*

43. Corpus itaque morbo jam factum opportunum, a statu sano et perfectissimo

43. *Itaque corpus jam factum opportunum morbo, videtur deflexisse nonnihil a*

of it, which are particularly troublesome, are to be mitigated. In this way diseases are prevented, cured, and relieved.

42. The more remote cause, which produces only a tendency to diseases, always is inherent in the body, although it frequently derived its first origin from without; but the exciting cause can be either internal or external. Both of them concurring, disease is established; but neither of them alone can produce a disease. Every exciting cause does not produce disease in every person; nor do all men who are already become predisposed to diseases, without an exciting cause being applied, contract diseases.

43. Therefore the body, rendered liable to disease, appears

nonnihil deflexisse videtur, licet nondum actiones ejus adeò impediantur, ut verus morbus rectè dicatur adesse (24). Nonnunquam verò talis corporis conditio diu perstans eò usque ingravescit, ut sola, nullâ adjectâ causâ excitante, justum et manifestum morbum faciat; vel, ut quidam loqui amant, causa quoque excitans fiat. Solidarum partium debilitas generalis, partiumque solidarum, quæ, distinctionis causâ, vivæ dicuntur, mobilitas nimia, corporis plenitudo, a nimiâ sanguinis abundantiâ hujusmodi exempla sunt.

44. Nec quisquam hominum tam firmam valetudinem, tantumque corporis robur habet, quin, causis quibusdam excitantibus ad-

statu sano et perfectissimo, licet actiones ejus (i. e. corporis) nondum adeò impediantur, ut verus morbus rectè dicatur adesse (24). Verò nonnunquam talis conditio corporis diù perstans ingravescit adeò usque, ut sola (conditio), nulla causâ excitante adjectâ, faciat morbum justum et manifestum; vel, ut quidam amant loqui, fiat quoque causa excitans. Debilitas generalis partium solidarum, nimia mobilitas partium solidarum quæ, causâ distinctionis, dicuntur vivæ, plenitudo corporis a nimiâ abundantiâ sanguinis, sunt exempla hujusmodi.

44. Nec quisquam hominum habet valetudinem tam firmam, que tantum robur corporis, quin quibusdam causis excitantibus admotis,

somewhat to have declined from its healthy and most perfect state, although its actions are not yet so much impeded, that a real disease may be said to be established. But sometimes such a state of body, when long continued, aggravates to such a degree, that it alone forms a real and evident disease; or, as some like to express themselves, it becomes an exciting cause. General weakness of the solids, excessive mobility of the solids, which for the sake of distinction are called living, a full habit of body from too much blood, are instances of the above description.

44. There is no one who has such firm health, and such strength of body, but that, if certain exciting causes be applied, he may fall into very severe diseases. Small-pox

motis, in gravissimos morbos incidat. *Variola* semèl, *lues venerea* sæpè, etiam sanissimos inficiunt; venena necant; caloris vel frigoris nimium multimodis nocet.

45. Causa quoque excitans, quanquam non statim morbum induxerit, si diù perstiterit, constitutionem corporis, quamvis validissimam, paulatim corrumpet, et variis morbis obnoxiam reddet; scilicet alteram causam remotam, nempe quæ corpus morbo opportunum facit, gignit, vel in eam convertitur. Eadem igitur res nunc causa excitans, nunc rursus causa remotior, esse potest.—Cœli intemperies, desidia, luxus hujusmodi exempla sunt.

46. De his porrò tribus generibus causarum morbi,

(ille) incidat in gravissimos morbos. Variola semèl, lues venerea sæpe, inficiunt etiam sanissimos; venena necant; nimium caloris vel frigoris nocet multimodis.

45. *Quoque causa excitans, quanquam (illa) non statim induxerit morbum, si diù perstiterit, paulatim corrumpet constitutionem corporis quamvis validissimam, et reddet obnoxiam variis morbis; scilicet, gignit alteram causam remotam, nempe (talem) quæ facit corpus opportunum morbo vel convertitur in eam. Igitur eadem res nunc potest esse causa excitans, nunc rursus causa remotior.—Intemperies cœli, desidia, luxus sunt exempla hujusmodi.*

46. *Porrò, de his tribus generibus causarum morbi,*

attacks once; Lues Venerea infects frequently even the most healthy persons. Poisons destroy; and too much heat or cold is injurious.

45. An exciting cause also, although it may not directly have produced disease, if long continued, will gradually destroy the constitution of the body, although very strong, and will render it exposed to various diseases; for it generates another remote cause, such as renders the body liable to disease, or is converted into disease itself. Therefore the same circumstance at one time can be an exciting cause, at another time a more remote one. Inclemency of weather, idleness and luxury are instances of this kind.

46. But touching these three kinds of causes of disease,

scire juvabit, notionem causarum remotarum utriusque generis (37) justam esse, et magni momenti in re medicâ. Quamvis enim medici haud parùm sæpè erraverint de causis remotis variorum morborum, cum temerè de iis statuere ausi sunt; tamen notiones generales de iis quæ ipsis in animo versarentur sanæ fuerunt: multorumque sanè morborum causæ remotæ, tam *prædisponentes* quam *excitantes*, vel observando, vel experiendo, et cautè ratiocinando, jam satis cognitæ sunt et exploratæ: earumque notitia medicis utilissima est.

47. Causam verò proximam quod attinet, ipsa ejus notio generalis, si non prorsus falsa, saltem confusa

juvabit scire, notionem causarum remotarum utriusque generis (37) *esse justam, et (esse) magni momenti in re medicâ.—Enim quamvis medici sapè erraverint haud parùm de causis remotis variorum morborum, cum ausi sunt temerè statuere de iis; tamen notiones generales de iis quæ versarentur in animo ipsis, fuerunt sanæ; que sanè causæ remotæ, tam prædisponentes quam excitantes multorum morborum jam satis cognitæ et exploratæ sunt, vel observando, vel experiendo et cautè ratiocinando; que notitia earum (causarum remotarum) est utilissima medicis.*

47. *Verò (de illo) quod attinet (ad) proximam causam, ipsa notio generalis ejus, si non est prorsùs falsa, saltem*

it will be useful to know, that the idea of both kinds of remote causes (38) is proper, and of great importance in the practice of medicine. For although medical men have erred consideraby concerning the remote causes of various diseases, when they rashly ventured to determine upon them; nevertheless the general ideas concerning them, which they had turned over in their mind, were correct: and, in truth, the remote causes of diseases, both predisposing and exciting, have become known and ascertained by observation, experience, and careful reasoning: a knowledge of such (remote causes) is most useful to medical men.

47. But as to the proximate cause, a general knowledge of it, if not entirely erroneous, is at least very confused and

admodùm est, et obscura, et temerè a rebus abstracta. Quærunt enim medici, et, non facilè invenientes, sibimet fingunt aliquid causæ omnis morbi, unde iste morbus oriatur, eodem ferè modo ac variæ mutationes vel effectus, quæ in rebus inanimatis observantur, a suis causis proveniunt. In plerisque autem affectionum, quas morbos vocare solemus, nihil istiusmodi existere videtur, neque profectò existere potest; et talis notio planè oritur a male intellectâ naturâ, tum corporis ipsius, tum quoque morborum qui in eo fiunt. Morbus enim non est unus et simplex eventus vel mutatio, qualem in rebus inanimatis contemplari solemus et effectum vocare; sed series, sæpè longa, talium

(est) admodum confusa et obscura, et temerè abstracta a rebus. Enim medici quærunt, et non facilè invenientes (quod quærunt), fingunt sibimet aliquid causæ omnis morbi, unde iste morbus oriatur, ferè eodem modo ac variæ mutationes vel effectus quæ observantur in rebus inanimatis, proveniunt a causis suis. Autem nihil istiusmodi videtur existere in plerisque affectionum, quas solemus vocare morbos, neque (nihil) profectò potest existere; et talis notio planè oritur, a naturâ malè intellectâ, tum corporis ipsius tum morborum qui fiunt in eo. Enim morbus non est unus et simplex eventus vel mutatio, qualem solemus contemplari in rebus inanimatis et vocare effectum; sed (ille est) series

obscure, and injudiciously decided upon. For medical men seek, and not easily finding it, imagine to themselves some one cause of every disease, from which (cause) the disease may arise, almost in the same way as the various changes and effects observed in inanimate objects proceed from their causes. But nothing of that description appears to exist in many of the affections, which we are wont to call diseases; nor, indeed, can any such thing exist; such an idea evidently arises from the slightly understood nature, as well of the body itself as of the diseases which take place within it. For disease is not a single and simple event or change, such as we are accustomed to observe in

eventuum vel mutationum; quarum aliæ aliis causæ videntur esse (26). Fieri quidem potest, ut, sublatâ unâ alterâve harum, tota series vel abrumpatur, vel brevi desinat; et sic morbus in sanitatem mutetur. Sed hoc minimè perpetuum est, neque in omni morbo, neque in quolibet ferè morbo omni tempore. Prætereà, corpus ipsum longè aliter se habet ac res inanimata, quod ad mutationes quæ in eo fiunt, et causas, sive externas sive internas, unde hæ proveniant. Inest enim corpori vivo principium aliquod mutationis, simile quodammodò illi quod in herbis observatur, et longe alienum a natura materiæ inanimatæ, ægre definien-

sæpè longa talium eventuum vel mutationum; quarum (mutationum) aliæ videntur esse causæ aliis (26). *Quidem potest fieri, ut unâ alterâve harum sublatâ, tota series vel abrumpatur, vel desinat brevi (tempore); et sic morbus mutetur in sanitatem. Sed hoc est minimè perpetuum, neque in omni morbo, neque fere in quolibet morbo omni tempore. Prætereâ corpus ipsum habet se longe aliter ac res inanimata, quod ad mutationes quæ fiunt in eo, et (quod ad) causas, sive externas sive internas unde hæ proveniant. Enim aliquod principium mutationis inest corpori vivo, quodammodo simile illi (principio mutationis) quod observatur in herbis et longe alienum a*

inanimate objects, and to call an effect, but frequently (it is) a long series of such occurrences and changes; some of which appear to be causes to the others. It can indeed happen if one or other of these be removed, the whole series may be disconnected or shortly put a stop to; and thus disease may be changed to a state of health. But this is by no means a constant occurrence, neither in every disease, nor scarcely in any disease, on every occasion. Moreover the body itself is differently constituted to inanimate objects, both as to the changes which take place in it, and as to the external and internal causes from which they proceed. For there is some principle of change in the living body, in some degree like (the principle of change) observed

dum, nondum ea qua par esset diligentia et accuratione exploratum, vitale principium haud inepte nominandum, cui vix minus quam causis vulgo observatis tribuendæ sunt plurimæ mutationes, tam morbosæ quam salutares, quæ corpori eveniunt. Hæc quum ita sint, non mirum esse poterit multa medicorum commenta de causis *proximis* variorum morborum prorsus futilia esse, et non modo falsa, sed adeo confusa et obscura, ut vix possint intelligi, neque fortasse ab ipsis eorum auctoribus unquam satis intellecta fuerint.

48. Unde vero morbi, vel morborum causæ? Certe ab ipsa imprimis machinæ

naturâ materiæ inanimatæ, ægrè definiendum, (et) nondum exploratum ea diligentiâ et accuratione quâ par esset, (scilicet) vitale principium haud ineptè nominandum, cui (principio) plurimæ mutationes, tam morbosæ quam salutares quæ eveniunt corpori, tribuendæ sunt vix minus quam causis vulgò observatis. Quum hæc ita sint, non poterit esse mirum, multa commenta medicorum de causis proximis variorum morborum, esse prorsus futilia, et non modo falsa, sed adeò confusa et obscura, ut vix possint intelligi neque fortasse unquam satis intellecta fuerint ab ipsis auctoribus eorum.

48. *Vero unde (sunt) morbi, vel causæ morborum? Certè (illi sunt) imprimis*

in plants, and widely different from the nature of inanimate substance, difficult of definition, (namely) the vital principle, not inaptly designated; to it many of the changes both morbid and healthy which occur to the body, are to be attributed, not less than to the causes commonly observed. This being the case, it is not surprising, that many theories of medical men on the proximate causes of diseases are entirely futile, and not only erroneous, but so confused and obscure, as to be scarcely intelligible, nor perhaps have they ever been satisfactorily understood by the authors themselves.

48. But whence are diseases or the causes of them? They arise especially from the constitution of the animal machine.

animalis constitutione. Ut vitrum ex officina prodit fragile, sic homines debiles, caduci, morbis opportuni, nascuntur. Hinc multi morbi, causa modo excitante idonea admota, omnibus communes. Sed quidam præ cæteris homines aliis atque aliis plectuntur morbis. Hujus rei ratio multiplex.

49. Ut sanus sanam prolem, sic morbosus morbosam gignit. Hinc morbi hæreditarii in seros nepotes transituri. Hoc modo sæpe delicta majorum immeriti luimus. Sunt quidam ex his morbis qui prima ætate sese aperte produnt; sunt qui omnem ætatem invadunt pariter; nec desunt qui ad summam usque se-

ab ipsâ constitutione machinæ animalis. Ut vitrum prodit fragile ex officinâ, sic homines nascuntur debiles, caduci, (et) opportuni morbis. Hinc multi morbi communes omnibus, causâ idoneâ excitante modò admotâ. Sed quidem homines præ cæteris plectuntur morbis aliis atque aliis. Ratio hujus rei (est) multiplex.

49. *Ut sanus homo gignit sanam prolem, sic morbosus homo (gignit) morbosam (prolem). Hinc morbi hæreditarii sunt transituri in seros nepotes. Hoc modo sæpe nos immeriti luimus delicta majorum. Sunt quidam ex his morbis, qui produnt sese aperte primâ ætate; sunt (alii) qui invadunt pariter omnem ætatem; nec desunt (alii) qui occulti*

As glass issues from the manufactory brittle, so men are born weak, falling away, and liable to diseases. Hence many diseases, common to all mankind, provided a proper exciting cause be applied. But some men compared with others are afflicted with various diseases, and of this the reason is manifold.

49. As a healthy man begets healthy offspring, so a sickly man begets a sickly one; hence there are hereditary diseases, which pass down to the remotest descendants; and in this way we often pay undeservedly for the vices of our ancestors. There are some of these diseases which openly show themselves in infancy; others attack indiscriminately every age, nor are there wanting others which lie dormant

nectutem occulti delitescunt, neque suspecti, viresque paulatim nacti, suo quisque demum tempore, gravius erumpunt.

delitescunt usque ad summam senectutem, neque suspecti, que nacti vires, paulatim erumpunt gravius, quisque (morbus) demùm suo tempore.

50. Sunt qui nobiscum nascuntur morbi vel vitia, neque tamen congenita: nempe, si, donec in utero lateret, matre forsan incolumi, fœtus tantum a casu quovis aliquid detrimenti acceperit. Sunt forsitan neque simul nati neque congeniti morbi, quos cum prima nutricis lacte infans suxisse videtur.

50. *Sunt (aliqui) morbi vel vitia qui nascuntur nobiscum, neque tamen congenita; nempe, si fætus donec lateret in utero, matre forsan incolumi, acceperit aliquid detrimenti tantùm a casû aliquo. Morbi sunt forsitan neque simùl nati neque congeniti, quos (morbos) infans videtur suxisse cum primâ lacte nutricis.*

51. Porro, sunt qui varios ætatis gradus sequuntur, et suum quisque solum comitantur; nempe, qui ex iis quas corpus, variis ætatibus, mutationibus subit, originem ducunt. Hinc

51. *Porro (morbi) sunt, qui sequuntur varios gradus ætatis et comitantur, quisque (morbus) suum (grudum) solum; nempe (ilii morbi) qui ducunt originem ex iis mutationibus, quas corpus*

even to extreme old age, not suspected, but gaining strength by degrees, burst forth with greater severity, each disease in its season.

50. There are some diseases or defects with which we are born which are nevertheless not congenital; for instance, if the fœtus, whilst in the womb, and the mother is uninjured, receives some injury by chance, or some accident; there are likewise diseases, neither congenital nor born with us, which the infant appears to have imbibed from the first milk of the nurse.

51. Moreover there are diseases which attend the different stages of age, each his own peculiar one; namely, those diseases which arise from the various changes which the

varii infantum, juvenum, senum, morbi.

52. Quin et uterque sexus, præsertim muliebris, suos morbos habet, cùm a generali corporis habitu provenientes, tum quoque a fabrica speciali, et statu, et usu, quæ generationi inserviunt partium. Sunt igitur et virorum et fœminarum morbi; sunt virginum, gravidarum, parturientium, lactantium, vetularum.

53. Cœlum ipsum, sub quo degunt homines, nonnunquam ægros facit. Unicuique nimirum regioni suum inest vitium: sive calidior justo, sive frigidior fuerit, sive varia, multisque et subitis tempestatis mutationibus obnoxia.

subit, variis ætatibus. Hinc (sunt) varii morbi infantum, juvenum, et senum.

52. Quin et uterque sexus, præsertim muliebris, habet suos morbos, cùm provenientes à generali habitû corporis, tum quoque a fabricâ speciali et statu, et usu partium, quæ inserviunt generationi. Igitur morbi sunt virorum et fæminarum; (morbi) sunt, virginum, gravidarum, parturientium, lactantium et vetularum.

53. Cælum ipsum, sub quo homines degunt, nonnunquam facit (illos) ægros; nimirum suum vitium inest unicuique regioni: sive (illa regio) fuerit calidior justo, sive frigidior, sive varia, que obnoxia multis et subitis mutationibus tempestatis.

body undergoes at different periods. Hence the various diseases of children, young and old men.

52. But, moreover, each sex, especially the female, has its own peculiar diseases, both arising from the general habit of body and from the special condition and use of thé parts subservient to generation. There are therefore diseases of men and of women, likewise of virgins, of those child-bearing, parturient, of suckling, and of women of advanced age.

53. The sky itself under which men live sometimes renders them disabled, for it has its pernicious effect in every region, whether it be hotter or colder than is proper, or variable, or subject to many and sudden changes of weather.

54. Aer quoque ipse, qui purus sacram vitæ flammam alit, impurus factus, eandem vel statim extinguere potest, vel multis vaporibus onustus, aut nocivis quibusdam effluviis corruptus, ingentem morborum cohortem inducere.

55. Cibi etiam potusque quibus utimur sæpe corrumpuntur, rebusque interdum inquinantur sanitati et vitæ infestissimis: iidem vero, quamvis sua natura optimi, nimia copia sumpti, serius vel ocyus corpori nocebunt.

56. Existunt porro venena vi adeo lethali prædita, ut vel minima quantitate, sensibusque vix ac ne vix quidem detegenda,

54. *Aer ipse quoque, qui purus alit sacram flammam vitæ, factus impurus, potest vel statim extinguere eandem, vel onustus multis vaporibus, (et) corruptus quibusdam effluviis nocivis, inducere magnam cohortem morborum.*

55. *Etiam cibi que potus, quibus utimur, sæpe corrumpuntur, que interdum inquinantur rebus infestissimis sanitati et vitæ; vero iidem, quamvis (sunt) optimi suâ naturâ, sumpti nimiâ copiâ; nocebunt corpori serius vel ocyùs.*

56. *Porrò existunt venena prædita*[22] *vi adeo lethali, ut vel minimâ quantitate, que detegenda sensibus vix ac ne quidem vix, (cum) recepta*

54. The atmosphere itself also, which when pure keeps up the sacred flame of life, when vitiated, is enabled in an instant to destroy life, or when loaded with vapours, or corrupted with certain noxious effluvia, may induce a long series of diseases.

55. Food and drink also which we take, are frequently corrupted, and sometimes tainted with things most injurious to health and life; but the same, although good in quality, when taken in excess will injure the body later or sooner.

56. Moreover, there are poisons of so deadly a nature, that in a very small quantity, so as scarcely and not possibly detected by our senses, when received into the body, have

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22. *Dignus, indignus, præditus,* &c. require an ablative case after them, as, *præditus vi, præditus ingenio.*

in corpus recepta, dirissimos morbos, vel fortasse inevitabilem mortem, induxerint.

57. Denique, innumeris casibus, nec raro maximis periculis, homo objicitur, plerumque quidem incolumis evasurus: sæpe tamen infelix succumbit; sæpe saucius, contusus, membra fractus aut luxatus, ægre evadit; nonnunquam prorsus insanabilis. Casusque hujusmodi, quanquam primam a causa externa originem trahant, haud raro in internos morbos desinunt.

58. Hæc omnia extrinsecus; nec minora intus pericula imminent.

59. Dum spirat homo

in corpus, induxerint dirissimos morbos, vel fortasse mortem inevitabilem.

57. Denique homo objicitur innumeris casibus, nec rarò maximis periculis, plerumque quidèm (ille) evasurus (est) incolumis; tamen sæpè (ille) infelix succumbit; sæpè ille saucius, contusus, fractus aut luxatus[23] *membra, ægre evadit; nonnunquam (ille) prorsus insanabilis (est). Que casus hujusmodi, quanquam trahant originem a causâ externâ, haud raro desinunt in morbos internos.*

58. Hæc omnia (sunt) extrinsecus; nec minora pericula imminent intus.

59. Dum homo spirat,

brought on most deleterious diseases, or perhaps inevitable death.

57. Lastly, man is exposed to innumerable accidents, and frequently very great dangers, from which he generally escapes: but frequently he is unfortunate and succumbs; sometimes wounded, bruised, with limbs fractured, and dislocated, he escapes with difficulty; but sometimes is entirely incurable. Accidents of this kind, although taking their origin from an external cause, not unfrequently terminate in internal diseases.

58. All these things are derived from without; but dangers of no less importance are threatening within.

59. As long as man breathes, he diffuses a poison, dele-

23. The accusative is sometimes put after adjectives and participles, where the preposition *secundum* seems to be understood, as *demissus vultum, luxatus membra.*

lethale sibi aliisque spirantibus venenum fundit. Neque solus pulmonis halitus adeo nocet: manat et ab omni cutis foramine materia subtilissima, venenata, fortasse putrescens, quæ diu collecta, neque per auras diffusa, et corpori denuo admota, aut iterum in id ipsum recepta, gravissimis morbis inficit; nec sistit gradum, sed veluti vires per pabulum nacta, longe lateque per populos grassatur.

60. Functiones quoque animales, quas nostro arbitrio regimus, sæpe aut negliguntur, aut nimis exercentur. Ex utroque periculum. Desidiâ, sive animi sive corporis, utriusque vires languescunt: nimia exercitatione, haud minus

fundit lethale venenum sibi aliisque animantibus. Neque halitus solus pulmonis adeò nocet: et materia subtilissima venenata forse putrescens, manat ab omni foramine, quæ (materia) diù collecta, neque diffusa per auras et denùo admota corpori, aut iterum receptum in id ipsum (i. e. corpus) inficit, gravissimis morbis; nec sistit gradum, sed veluti nacta vires per pabulum, grassatur longe que latè per populos.

60. *Quoque functiones animales quas regimus nostro arbitrio, aut sæpe negliguntur, aut nimis exercentur. Ex utroque periculum (est). Desidiâ, sive animi sive corporis, vires utriusque languescunt; haud minùs læduntur nimiâ exercitatione.*

terious to himself, as well as to other animals. Nor is the exhalation of the lungs alone injurious, (for) a very subtle and poisonous matter, perhaps putrid, flows from every pore, which having been long collected, and not scattered through the air, and again applied to the body, or again received into it, brings on most severe diseases. Neither does it stop its progress, but having, as it were, gained strength with its aliments, ranges far and wide.

60. The animal functions also which are under our control, are frequently either neglected, or too much exercised. There is danger from each extreme. By indolence either of the mind or body, the powers of both become weakened. They are not less injured by too much exercise. For the

læduntur. Statuit enim provida rerum Parens, ut singularum partium, et universi corporis animique vires usu roborentur et acuantur; et huic iterum certos fines posuit: ita ut neque quem voluit natura usus impune omittatur, neque ultra modum intendatur. Hinc athletæ, et otiosi et desides, pariter morbis, sed singuli suis, obnoxii: hinc quoque damnum a nulla aut nimia mentis exercitatione: hinc quoque multi morbi, quibus varii obnoxii sunt artifices, morbosi fere et degeneres homines; scilicet qui eadem semper arte, ipsaque forsitan parum salubri, occupati, partes quasdam corporis plurimum, sæpe nimis, exercent, dum multis

Enim provida Parens rerum statuit, ut virès singularum partium, et universi corporis que animi roborentur et acuantur usû; et iterum posuit fines huic; ita ut neque usus omittatur, quem natura voluit, neque intendatur ultra modum. Hinc athletæ, et otiosi, et desides pariter (sunt) obnoxii morbis, sed singuli suis; hinc quoque (est) damnum a nulla aut nimiâ exercitatione mentis; hinc quoque (sunt) multi morbi, quibus varii artifices sunt obnoxii, fere morbosi et degeneres homines; scilicet, (illi) qui semper occupati eâdem arte que ipsâ forsan parùm salubri, exercent plurimùm sæpe nimis quasdam partes corporis, dum parùm utuntur multis aliis partibus; vel fortasse

provident Parent of nature has ordained, that the powers of individual parts, and of the body and mind in general, should be strengthened and rendered more acute by use; and she has likewise assigned limits to them, so that the exercise which nature intended should not be omitted, nor carried beyond moderation. Hence, athletics, the idle, and indolent, are liable to diseases, each to those peculiar to himself: hence also there is mischief from not any, or excessive exercise of the mind; hence also there are many diseases to which artisans are liable, (for) they are generally sickly and degenerate men: for instance, such as are always occupied in the same employment, and that perhaps not a healthy one; they often exercise too much certain parts of the body, whilst

aliis partibus parum utuntur; vel fortasse pravo corporis situ, aut malo vitæ genere, earundem functiones multum impediunt; et sic, dum mirum quarundam partium adipiscuntur usum et robur, generalem corporis vigorem, et, quæ ab illo pendet, prosperam valetudinem, male perdunt.

61. Cæterum et ab iis quas nullo nostro arbitrio regimus, tam animi quam corporis functionibus, valetudinis discrimen non leve esse potest. Animi imprimis affectus, qui modici grate excitant, vehementes, aut graves et diuturni, hujus pariter ac corporis vires frangunt; hominem interdum statim extinguunt, sæpius longa valetudine macerant. Somni etiam, quo

pravo sitú corporis aut malo genere vitæ, multum impediunt functiones earundem; et sic, dum adipiscuntur mirum usum et robur quarundam partium, male perdunt generalem vigorem corporis, et prosperam valetudinem, quæ pendet ab illo.

61. *Cæterùm discrimen valetudinis non potest esse leve, et ab iis functionibus tam animi quam corporis, quas (functiones) regimus nullo nostro arbitrio. Imprimis affectus animi (qum) modici gratè excitant, (quum) vehementes, aut graves et diuturni, frangunt pariter vires hujus ac corporis; interdum statim extinguunt hominem, sæpius macerant longâ valetudine. Ex-*

many others are but little used; they likewise obstruct the functions of the same, perhaps, either by a bad position of the body, or by a bad mode of living: in this way, whilst they acquire wonderful use and strength of certain parts, they sadly lose their general vigour of body, and that flourishing state of health, dependant upon it.

61. The health is in no slight risk of danger from the functions of the mind and body which are not under our control. In particular, the affections of the mind, which when moderate are agreeably exciting, when violent, or depressing, or long continued, equally break down its strength as well as that of the body: sometimes they destroy instantaneously, (but) more frequently waste man away by tedious

ad exhaustas vires reficiendas egemus, excessus vel defectus, et animo et corpori nocent.

62. Sunt multa in statu sanissimo e corpore semper excernenda. Hæc si retinentur, malum est: si plus justo excernuntur, malum quoque: si naturâ retinenda, sponte, vel casu, vel arte excernuntur, malum iterum. Ex his quoque (61, 62) facillime intelligetur, gravissimum sæpe oriri posse periculum ab inepto aut intempestivo remediorum usu: quippe quæ varias functiones, corpori proprias et necessarias, aut excitent et intendant præter naturam, aut sopiant et reprimant, secretionesque demum et excretiones sæpe minuant, sæpe ultra modum

cessus vel defectus somni quo egemus ad vires exhaustas reficiendas, nocent et animo et corpori.

62. Multa sunt excernenda e corpore, in statû sanissimo. Si hæc retinentur, est malum: si excernuntur plus justo, quòque malum est; si retinenda (sunt) naturâ, excernuntur sponte vel casû vel arte, iterum malum est. Quoque facillimè intelligetur ex his, sæpe gravissimum periculum posse oriri ab inepto aut intempestivo usû remediorum; quippe (illa) quæ aut excitent aut intendant præter naturam varias functiones proprias et necessarias corpori aut sopiant et reprimant que demum minuant sæpe que secretiones et excretiones, sæpe augeant ultra

illness. Excess or want of that sleep which we stand in need of to repair the wasted strength, is injurious both to the mind and body.

62. There are many things to be secreted from the body in its most healthy state. If these are retained, there is mischief; if they are secreted in excess, there is also mischief; (and) if those which should be retained are excreted spontaneously, by accident, or by means of art, there is again also mischief. It will be easily understood from this, that frequently the greatest danger may arise from an undue and unseasonable use of remedies; namely, such as either excite or preternaturally force the various functions which are proper and necessary to the body, or allay or repress

augeant, vel denique novas efficiant excretiones et detractiones humorum, quales natura neque instituerat unquam in statu sano, neque sine damno ferre potest.

63. Ut solidæ partes interdum flaccescunt, molliuntur, fere solvuntur, propriis muneribus impares factæ; sic fluidæ nonnunquam spissantur, et in massas solidas etiam durissimas formantur: unde organorum actiones impeditæ, dolor insignis, et varii et graves morbi.

64. Postremo, animantia quædam inter morborum causas recensenda sunt: nimirum quæ suam vitam aliorum malo tolerant. Ipse animalium dominus hujus-

modum vel denique efficiant novas excretiones et detractiones humorum, quales natura neque instituerat in statû sano, neque potest fieri sine damno.

63. *Ut interdum solidæ partes flaccescunt molliuntur, ferè solvuntur, (et sunt) factæ impares propriis munerîbus; sic fluidæ (partes) nonnunquam spissantur, et formantur in massas solidas etiam durissimas; unde actiones organorum (sunt) impeditæ, dolor (est) insignis, et (sunt) varii et graves morbi.*

64. *Postremò, quædam animantia sunt recensenda inter causas morborum; nimirum quæ tolerant suam vitam malo aliorum. Ipse dominus animalium est præ-*

them, or at length, frequently diminish both the excretions and secretions, or increase them immoderately, or lastly, give rise to new excretions and discharges, such as nature would never have established in the healthy state, nor could take place without injury.

63. As the solid parts sometimes become flaccid, are softened and nearly dissolved, and are rendered unfit for their proper functions; so the fluid parts are sometimes thickened and formed into very hard solid masses; by which means the organic actions are impeded, there is remarkable pain, and various acute diseases.

64. Lastly, certain animals may be enumerated amongst the causes of diseases, namely those that support their life by the disease of others. The lord himself of the animals

modi animantibus prædæ est et domicilio, quæ vel extrinsecus invadunt, vel intus habitant, et viscera adhuc vivi rodunt, sæpe cum insigni malo et vitæ discrimine, nec raro ipsius jactura.

65. Verum neque tot tantisque periculis homo inermis objicitur; neque, simul ac morbus invaserit, nulla superest salutis spes. Inest enim corpori vis prorsus mirabilis, quâ contra morbos se tueatur, multos arceat, multos jam inchoatos quam optime et citissime solvat, aliosque suo modo, ad felicem exitum lentiùs perducat.

66. Hæc *Autocrateia* seu *Vis Naturæ medicatrix* vocatur; medicis atque philosophis notissima, et mul-

dæ et domicilio animantibus hujusmodi, quæ vel invadunt extrinsecus, vel habitant intus, et rodunt viscera corporis adhuc vivi sæpe cum insigni malo et discrimine vitæ, nec raro jacturâ ipsius.

65. *Verum neque homo inermis objicitur tot tantisque periculis; neque, nulla spes salutis superest, simul ac morbus invaserit. Enim vis prorsus mirabilis inest corpori quâ (vi) corpus se tueatur contra morbos, arceat multos (morbos), solvat multos jam inchoatos, quam citissimè et optimè, que lentiùs perducat alios suo modo, ad felicem exitum.*

66. *Hæc (vis) vocatur Autocrateia seu Vis medicatrix Naturæ; notissima medicis atque philosophis et*

is a prey and habitation to vermin of this kind, which either attack externally or inhabit within, and corrode the viscera of the body whilst living, frequently producing great danger and risk, and not unfrequently the loss of life.

65. Man is not exposed defenceless to so many and great dangers, nor is he left hopeless as soon as a disease attacks him. For there is an astonishing power in the body, by which it protects itself against diseases, drives off many others, relieves those already commenced, in the speediest and best manner, and conducts others by a slower process, in its own way, to a favourable termination.

66. This power is called Autocrateia, or Vis medicatrix Naturæ, well known to medical men and philosophers, and

tum neque immerito celebrata. Hæc sola ad multos morbos sanandos sufficit, in omnibus fere juvat: quin et medicamenta sua natura optima tantum solummodo valent, quantum hujus vires insitas excitent, dirigant, gubernent. Medicina enim neque prodest cadaveri, neque repugnante natura quicquam proficit. — Hîc plane est aliquid similis et communis inter salutares vires remediorum, et nocentes causarum morborum, de quibus jam (47) dictum est.

67. His Naturæ viribus vulnera sanantur, sanguinis fluxus compescitur, ossa diffracta coalescunt, multa noxia e corpore ejiciuntur, et sic, quæ nulla ars attin-

celebrata multum neque immeritò. Hæc (vis) sola sufficit ad sanandos multos morbos, ferè juvat in omnibus (morbis); quin et medicamenta optima suâ naturâ, solummodo tantùm valent, quantum excitent, dirigant, gubernent vires hujus. Enim medicina neque prodest cadaveri, neque proficit quicquam, naturâ repugnante. Hic planè est aliquid similis et communis inter salutares vires remediorum, et nocentes (vires) causarum morborum, de quibus jam dictum est (47).

67. *His viribus Naturæ vulnera sanantur, fluxus sanguinis compescitur, ossa diffracta coalescunt, multa noxia ejiciuntur e corpore, et sic mala quæ nulla ars*

much and deservedly celebrated. This power alone is sufficient to cure many diseases, and is generally useful in all; and medicines of the best description are only useful inasmuch as they excite, direct, and govern the powers of this principle. For medicine is neither of use to a dead body, nor of any avail if nature is opposed to it: there is something alike and in common between the salutary influence of remedies and the noxious causes of diseases, of which we have already spoken.

67. By these powers of nature wounds are healed, hæmorrhage is stopped, fractured bones are united, and noxious things are thrown out of the body, and thus maladies, which no art could reach, disappear spontaneously and without any external aid.

gere potuisset mala, sine ope externa sua sponte evanescunt.

68. Merito igitur his viribus Medici confidunt, easque conantur languentes excitare, aut si plane defecerint, tum solitas earum actiones arte imitari. Non tamen iis solis semper fidendum est; quippe quæ in quibusdam morbis nullæ sint, in multis vero nimiæ et adeo vehementes, ut sint quam ipse morbus magis metuendæ.

69. Leviores morbi Naturæ viribus satis tuto relinquuntur; sed nemo sanus, hydropem, vel *luem veneream*, vel visceris cujusvis inflammationem, iisdem commiserit: scilicet

potuisset attingere, evanescunt suâ sponte sine ope externâ.

68. *Igitur meritò medici confidunt his viribus, que conantur excitare eas languentes, aut si planè defecerint, tum imitari arte solitas actiones earum. Tamen non semper fidendum est iis solis; quippe*[24]*, quæ*[24] *sint nullæ in quibusdam morbis, verò nimiæ et adeò vehementes in multis, ut sint metuendæ magis quàm ipse morbus (metuendus est).*

69. *Leviores morbi satis tutò relinquuntur viribus Naturæ; sed nemo sanus, commiserit hydropem, vel luem veneream vel inflammationem, cujusvis visceris iisdem (viribus); scilicet,*

68. Therefore medical men properly trust to these powers, and endeavour to excite them when languid, or if they have evidently failed, to imitate their actions by artificial means. However, we must not always trust to them alone, for in some diseases they are of no avail, and so excessive and violent in others, that they are more to be feared than the disease itself.

69. The more slight diseases are very safely left to the powers of nature; but no sensible man would trust dropsy, or Lues Venerea, or inflammation of any viscus to them alone; for in the former they are of no avail; but in the latter most

24. *Quippe, qui, quæ,* or *quod,* often occurs, and may generally be rendered by, as it, as she, or as they, or certain words may be considered as understood to complete the sense, as in the present case, for instance *quippe (sunt actiones) quæ.*

quæ in illis morbis nullæ sint; in his autem vehementissimæ, verum ineptæ, et valde periculosæ, et gangrænam, vel suppurationem fere haud minus exitialem, effecturæ.

70. A duplice errore igitur cavere oportet;—neque vires Naturæ spernere, neque nimis religiose colere. Tantum enim abest ut semper illius vestigia premere conveniat, ut sæpe necesse sit contrarium prorsus iter tenere, contraque ejus conatus summa ope niti.

71. Neque Medici officium tam arcto limite cohiberi ipsa Natura docet: suggerit enim prodiga, innumera remedia quæ maximis viribus in corpore hu-

quæ sint nullæ in illis morbis; autem in his, vehementissimæ, verùm ineptæ, et valde periculosæ, effecturæ et gangrænam, vel suppurationem ferè haud minùs exitialem.

70. *Igitur oportet cavere a duplice errore;—neque spernere vires Naturæ, neque colere nimis religiosè. Enim tantum*[25] *abest,*[25] *ut*[25] *semper conveniat*[25] *premere vestigia illius, ut sit sæpe necesse tenere iter prorsus contrarium, que niti summâ ope contra conatus ejus.*

71. *Neque ipsa Natura docet officium Medici cohiberi tam arcto limite; enim illa suggerit prodiga (et) innumera remedia quæ pollent maximis viribus in cor-*

potent, but inappropriate and very dangerous; tending to produce gangrene or suppuration, not much less destructive.

70. Therefore it is necessary to beware of the two-fold error—neither to disrespect the powers of nature, nor to rely upon them too scrupulously. For it is so far improper always to follow in her steps, that it is frequently necessary to take a directly opposite course, and to strive against her efforts with all our power.

71. Nature herself shows that the office of the medical man is not confined to such narrow limits; for she suggests innumerable and powerful remedies, which produce very

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25 *Tantum abest, ut semper conveniat,* so far is it from being proper, like *tantum abest miles ut perturbaretur,* so far is the soldier from being frightened.

mano pollent, et varias et saluberrimas mutationes in eo efficere valent. Hoc modo etiam plurimæ morborum causæ a solerte medico in præstantissima auxilia converti queant; scilicet, quicquid corpus vehementer afficit, eidem nunc neci (53, 62), nunc iterum remedio, esse potest.

72. Medici vero est, cognita natura et causa morbi, judicare quid mutationis requiratur, ut morbus in sanitatem mutetur. Hæc quidem est medicina rationalis sive *Dogmatica*. Est et altera, *Empirica* nimirum, quæ, missis hujusmodi ambagibus, sola remedia

pore humano, et valent efficere varias et saluberrimas mutationes in eo. Hoc modo etiam plurimæ causæ morborum queant converti a solerti medico in præstantissima auxilia; scilicet quicquid afficit corpus vehementer, nunc potest esse neci[26] eidem[26], nunc iterum remedio (eidem).

72. *Verò est officiun Medici, naturâ et causâ morbi cognitâ, judicare quid mutationis requiratur, ut morbus mutetur in sanitatem. Hæc medicina quidem est (medicina) rationalis sive Dogmatica. Et est altera (medicina) nimirum Empirica, quæ, ambagibus hujusmodi*

great effects on the human body, and are able to effect many and very salutary changes within it. In this way, many causes of diseases may be converted by a skilful physician into most powerful auxiliaries; for whatever has a powerful effect upon the body, at one time may be its death, at another time its cure.

72. It is the duty of the physician, having become acquainted with the nature and cause of disease, to decide what change may be required, that disease may be converted into health. This kind of medical practice is called rational, or dogmatic. But there is another kind; namely, the empirical, which laying aside shackles and doubts of this description, seeks for single remedies, and brings them forward as

26. *Sum*, with many other verbs, take two dative cases after it, as *mare est exitio nautis, quicquid vehemens est potest esse neci corpori.*

quærit et profert certa et definita vi prædita ad certos morbos delendos.

73. Hujusmodi remedia omnis circumforaneus medicus jactat, omnis anus se credit possidere; populusque, qui fere decipi quam sapere mavult, talibus remediis semper fidit; neque profecto, postquam sanitatem cum re amiserit, facile sinit gratissimum menti errorem eripi; scilicet quem nolit intueri, adeo blanda est sperandi pro se cuique dulcedo. Quam pauca vero istiusmodi remedia adhuc reperta fuerint, peritissimi medici fatentur et dolent. Quod si remedia quædam fuerint quæ vi nondum explorata aut intellecta in cor-

missis, quærit sola remedia et profert illa prædita vi certâ et definitâ ad delendos certos morbos.

73. Omnis circumforaneus medicus jactat remedia hujusmodi, omnis anus credit se possidere, que populus, qui fere mavult decipi quam sapere, semper fidit talibus remediis; neque profecto, postquam populus amiserit sanitatem cum re, sinit facilè gratissimum errorem eripi menti; scilicet quem nolit intueri, adeo blanda est cuique dulcedo sperandi pro se. Vero medici fatentur et dolent quam pauca remedia istiusmodi adhuc fuerint reperta. Quod si fuerint quædam remedia, quæ pollent in corpore humano vi nondum exploratâ

possessing a certain and specific power, in eradicating certain diseases.

73. Every wandering quack boasts of remedies of this description, every old woman thinks that she possesses some, and the multitude, who would rather be deceived than instructed, always put confidence in such remedies; nor even after losing their health, together with their money, will they easily permit that most grateful delusion to be eradicated; a delusion they will not see, so sweet is the pleasure of hoping in their own cases. Medical men confess and lament, that so few remedies of this description have been discovered. That there should be remedies, which possess some undiscovered and unknown influence upon the human

pore humano pollent, id minime mirum; quippe quia tot existant morbi quorum natura et causæ prorsus lateant. Cæterum, quo perfectior fuerit scientia medica, eo facilius erit medicamentorum virium, et modi quo corpus afficiant, variisque in morbis prosint, rationem reddere.

74. Remedia igitur ordinari solent, secundum effectus manifestos quos in corpore humano præstant. —Afficiunt vel partes solidas vel fluidas. Illas alunt, consumunt, firmant, laxant, excitant, sopiunt. Has vel quantitate vel qualitate vitiatas, corrigunt, atque evacuant; idque vel viis naturalibus, vel aliis insolitis et arte factis. — Nec desunt

aut intellectâ, id est minimè mirum quippe quia tot morbi existant, natura et causæ quorum (morborum) prorsùs lateant. Cæterum, quo perfectior scientia medica fuerit, eò faciliùs erit scientia virium medicamentorum et reddere rationem modi quò afficiant corpus, que prosint in variis morbis.

74. Igitur remedia solent ordinari, secundùm effectus manifestos, quos præstant in corpore humano. Vel afficiunt partes solidas vel fluidas. (Illa remedia) alunt, consumunt, firmant, laxant, excitant, (vel) sopiunt illas (partes). Corrigunt atque evacuant has, vitiatas quantitate, vel qualitate; que id (factum est) vel viis naturalibus vel aliis

body, is by no means surprising, because there are so many diseases, the causes and nature of which are hitherto concealed. But the more perfect medical science becomes, so much more easy will be the knowledge of the powers of medicines, both in explaining their modus operandi, and in what diseases they are useful.

74. Therefore remedies are usually ordered, according to the evident effects, which they produce in the human body: they either affect the solid or fluid parts. They nourish, consume, strengthen, relax, excite or depress them. They correct and evacuate them, when vitiated in quantity or quality; and this takes place either by the natural passages, or by others unusual, or produced by artificial means.

auxilia adversus concretiones intra corpus formatas, aut animalia in eodem hospitantia (63, 64).—Medicamentorum vero effectuum et modi quo corpus efficiunt, scientia, *Therapeia* vocatur.

(viis) insolitis vel factis arte. Nec auxilia desunt adversus concretiones formatas intra corpus, aut animalia hospitantia in eodem (63, 64). — *Vero scientia effectuum medicamentorum et modi quo afficiunt corpus, vocatur Therapæia.*

Nor are remedies wanting, for concretions within the body, or against animals lodging in the same, (63. 64). The knowledge of the effects of medicines, and their mode of operation, is called Therapeia or Therapeutics.

Cap. II.—De solida materia ex qua corpora animalium fiunt, variisque ejus dotibus, tum chemicis tum mechanicis; de conjecturis circa ejus ultimam et minutissimam fabricam; de tela reticulata; necnon de adipis origine, natura, et usu.

75. Corpus humanum constat ex partibus solidis et fluidis; quarum mutuâ actione functiones vivi hominis (quatenus corporeæ sunt) peraguntur. Utræque assidue mutantur et renovantur; solidæ vero lentius. Ab his igitur incipiendum est; quippe quæ universo corpori formam et firmitatem dent.

Cap. II.—De solidâ materiâ ex quâ corpora animalium fiunt, que de variis dotibus ejus, tum chemicis tum mechanicis; de conjecturis circa ultimam et minutissimam fabricam ejus; de telâ reticulatâ; necnon de origine, (de) naturâ et (de) usû adipis.

75. Corpus *humanum constat ex partibus solidis et fluidis, mutuâ actione, quarum (partium) functiones vivi hominis (quatenus illæ functiones sunt corporeæ) peraguntur. Utræque mutantur et renovantur assiduè; verò solidæ lentius. Igitur incipiendum est (nobis) ab his; quippe quæ dent formam et firmitatem universo corpori.*

Chap. II. *On the solid substance of which animal bodies are formed, its various properties, both chemical and mechanical; on the conjectures respecting its ultimate and minute structure; on the cellular substance; and on the origin, nature, and use of the fat.*

75. The human body consists of solid and fluid parts, by the mutual actions of which the functions of living man (inasmuch as they are corporeal) are performed. They are both being constantly undergoing change and renewal; the solid ones more slowly. Therefore we must begin with the latter; for it is these which give form and strength to the entire frame.

76. Solidam materiam ex qua corpora animalium constant, solidum animale brevitatis causa, vocamus. Hoc autem varias habet dotes, *chemicas*, *mechanicas*, vitales; quarum nulla non medici attentionem meretur.

77. Exquisita hujus ævi *Chemia* diversas *substantias*, sive *principia* ut dicuntur, in variis solidis partibus humani corporis detexit; easque substantias seorsim exhibere docuit. Ostendit imprimis, in ossibus præcipue, plurimam terram; calcem nimirum, non quidem puram, sed cum acidis quibusdam, *phosphorico* præsertim, conjunctam. Hic *Phosphas Calcis*, cum pauxillo *Carbonatis Calcis*, firmitatem

76. Vocamus solidam materiam, ex quâ corpora animalium constant, animale solidum, (pro) causâ brevitatis. Autem hoc habet varias dotes, chemicas, mechanicas, (et) vitales; nulla quarum non meretur attentionem medici.

77. Chemia exquisita hujus ævi detexit diversas substantias, sive principia ut dicuntur, in variis partibus solidis humani corporis; que docuit (nos) exhibere eas substantias separatim. Imprimis (Chemia) ostendit (esse) in ossibus præcipuè plurimam terram, nimirum calcem, non quidèm puram, sed conjunctam cum quibusdam acidis, præsertim (acido) phosphorico. Hic Phosphas Calcis, cum pauxillo Carbonatis Calcis, dat fir-

76. We call the solid material of which animal bodies consist, the animal solid, for the sake of brevity. This again has different properties, chemical, mechanical, and vital; neither of which are undeserving the attention of the medical man.

77. The refined chemistry of the present age has discovered different substances, or principles, as they are called, in the various solid parts of the human body; and has taught us how to show these substances in a separate state. In the first place, chemistry shows that there is much earthy matter in bones; namely, lime, not in a pure state, but combined with certain acids, especially the phosphoric. This phosphate of lime, with a little carbonate, gives strength to

dat ossibus; et cum *Cartilagine*, et multa *Gelatina*, et *oleo crasso*, ossa fere tota efficit. Plurima quoque
2 *Gelatina*, et pro rata parte parum terræ, inest *telæ cellulosæ*, et cuti, aliisque membranis quæ ex ea tela fiunt, et demum musculis. In his vero alia reperitur substantia animalis; plurima scilicet *Fibrina*. *Albumen* quoque in quibusdam partibus solidis corporis humani plane neque parce detectum est; maxime in *cartilaginibus*, et *tendinibus*, et *ligamentis*. Præter hæc multum *oleum crassum* in omnibus fere solidis animalibus reperitur; et *sales* quidam tam *acidi* quam *alcalini*; et interdum, ut videtur, sed multo parcius, aliæ quædam minoris

mitatem ossibus; et cum Cartilagine, et multâ Gelatinâ, et oleo crasso, fere efficit ossa tota. Quoque plurima Gelatina, et parum terræ pro rata parte, inest telæ cellulosæ, et cuti, que aliis membranis quæ fiunt ex eâ telâ, et (inest) demum musculis. Verò alia substantia animalis reperitur in his; scilicet plurima Fibrina. Albumen quoque planè neque parcè detectum est, in quibusdam partibus solidis corporis humani, maximè et cartilaginibus, et tendinibus, et ligamentis. Præter hæc multum oleum crassum reperitur ferè in omnibus partibus solidis; et quidam sales tam acidi quam alkalini; et interdum ut videtur sed multo parciùs, quædam aliæ substantiæ mino-

the bones, and together with cartilage, and much gelatine, and thick oily matter, forms them nearly entirely. Much gelatine and little earthy matter, compared with the part mentioned, is present in the cellular substance, in the skin, and in the other membranes which are formed by that network; and there is, lastly, (little) in muscles. But another animal substance is found in them; namely, fibrine, in considerable quantity. Albumen likewise has been discovered evidently, and not sparingly, in some solid parts of the human body; particularly in the cartilages, tendons and ligaments. Besides these, much thick oil is found in nearly all the solid parts, as well as certain acid and alkaline salts; and moreover, some other substances of less import, are sometimes

momenti substantiæ. Sed de his nondum satis constitit; quæ scilicet neque semper reperiuntur, nec unquam tanta copia adsunt ut facile explorentur.

78. Ulterius arte *chemica* exploratæ partes solidæ humani corporis, vel putredine, quam sponte subeunt modico calore, cum humore, et admisso aëre; vel magno calore, qualis priores elementorum compositiones destruat, novas ipsorum efficiat, facile in pauca elementa resolvuntur; duriores in *Calcem* et *Phosphorum;* molliores vero in *Carbonem, Nitrogenium* (vel *Azotium*), *Hydrogenium,* et *Oxygenium:* quæ igitur

ris momenti (reperiuntur). Sed nondum satis constitit[27] *de his; quæ*[27] *scilicet neque semper reperiuntur, nec unquam adsunt tantâ copiâ, ut explorentur facilè.*

78. Partes solidæ humani corporis ulterius exploratæ arte chemicâ facilè resolvuntur in pauca elementa, vel putredine, quam (illæ partes) subeunt sponte modico calore, cum humore, et aere admisso vel magno calore, qualis (calor) destruat priores compositiones elementorum, vel efficiat novas (compositiones) eorum: duriores (partes resolvuntur) in Calcem et Phosphorum; verò molliores in Carbonem, Nitrogenium (vel Azotium) Hydrogenium, et

apparently discovered, though in much less quantity. There is nothing satisfactorily established concerning those, which are not always found, and never present in such quantity as to admit of easy analysis.

78. The solid parts of the human body, examined more deeply by the aid of chemistry, are easily resolved into a few elements, either by the putrefaction which the parts undergo spontaneously, by means of moderate heat, moisture, and the access of air, or by exposure to an intense heat, such as destroys the primary composition of those elements, or gives rise to new ones: the harder parts are resolved into lime and phosphorus, but the softer ones into Carbon, Nitro-

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27. *Constat itit,* &c. is here used impersonally, and means to be agreed upon; as *constat de hac re inter omnes,* all men agree upon this matter, or it is agreed upon by all men, concerning this matter.

creduntur esse solidi animalis simplicissima elementa; siquid in severiore *Chemia* recte simplex dicatur. Hæc vero elementa, vel igne, vel putredine, aliter atque aliter separata et conjuncta, novas interim efficiunt substantias, quales sunt *Ammonia, Acidum carbonicum, oleum empyreumaticum*, et multi vapores fœtidi, quæ in recente et integro solido animali detegi nequeunt, facile autem et fere semper observantur dum hoc in sua elementa resolvitur.

79. Dotes *mechanicæ*, quibus solidum animale ad vitæ usus aptatur, sunt tres; adhæsio scilicet satis magna, mollities quædam flexilis, et *insignis vis resiliendi*.—

Oxygenium, quæ igitur creduntur esse simplicissima elementa solidi animalis; siquid dicatur rectè simplex in severiore Chemiâ. Verò hæc elementa separata et conjuncta aliter atque aliter, vel igne vel putredine interim efficiunt novas substantias, quales sunt Ammonia; Acidum Carbonicum, oleum empyreumaticum, et multi fœtidi vapores, quæ nequeunt detegi in recente et integro animali solido, autem facile et ferè semper observantur, dum hoc (solidum) resolvitur in sua elementa.

79. *Dotes mechanicæ, quibus animale solidum aptatur ad usus vitæ, sunt tres; scilicet adhæsio satis magna, quædam mollities flexilis, et insignis vis resi-*

gen, (or Azote) Hydrogen, and Oxygen, which are therefore considered to be the most simple elements of animal substance; if any thing in chemistry may be strictly called simple. These elements, separated and combined in various ways, either by the aid of heat or putrefaction, form new substances; such as Ammonia, Carbonic Acid, Empyreumatic Oil, and many fœtid vapors, which cannot be detected in the recent and sound animal solid, but are readily and nearly always observed, when this (substance) is resolved into its elements.

79. The mechanical properties, by which the animal solid is adopted to the purposes of life, are three; namely, sufficient adhesion, some flexibility, and considerable elasticity. Many vital functions consist in various motions; and the

Munera vitæ in variis motibus pleraque consistunt: ad multa eorum validissimi motus requiruntur. Tantâ igitur adhæsione partium opus est, ut hi sine lacerationis periculo perficiantur: oportet quoque, ob eandem causam, partes solidæ, aliæ magis, aliæ minus, se flecti sinant: denique, necesse est, ut partes ita flexæ, vel loco dimotæ, figuram et situm pristinum suâ sponte recuperent, quam primum vis dimovens sublata fuerit.

80. Variant multum hæ dotes, non modo variis partibus, sed et iisdem partibus in variis hominibus, et sæpe in eodum homine diversis temporibus. Hujusmodi varietates, quamvis satis insignes, valetudinem sæpè pa-

liendi.— Pleraque munera vitæ consistunt in variis motibus; validissimi motus requiruntur ad multa eorum (munerum). Igitur opus est tantâ adhæsione partium, ut hi perficiantur sine periculo lacerationis; quoque oportet (ut), ob eandem causam, partes solidæ, aliæ magis aliæ minus, sinant se flecti: denique necesse est, ut partes ita flexæ, vel dimotæ loco, recuperent suâ sponte figuram et situm pristinum, quam vis dimovens primùm sublata fuerit.

80. *Hæ dotes variant multùm non modo in variis partibus, sed et in iisdem partibus in variis hominibus, et sæpe diversis temporibus in eodem homine. Varietates hujusmodi, quamvis satis insignes sæpe parùm afficiunt*

most powerful motions are necessary to many of them. There is need of such a degree of cohesion of parts, that these motions may be executed without danger of laceration; it is likewise necessary, for the same reason, that the solid parts, some more, some less, should allow of flexion; lastly, it is necessary, that the parts so bent, or removed from their situation, should recover spontaneously that shape and primary position, which the displacing power had previously taken away.

80. These properties vary considerably, not only in the different parts, but also in the same parts, in different persons, and frequently at different times in the same individual. Varieties of this description, although remarkable,

rum afficiunt. Nonnunquam verò, sanitatis limites transeuntes, manifestos et sanè haud leves morbos faciunt.

81. Duplice modo variare aut vitiari potest, quod ad dotes *mechanicas*, omnis pars solida; scilicet, aut nimia aut nimis parva adhæsione, aut mollitie, aut vi resiliendi. Auctâ adhæsione seu firmitate partis cujusvis solidæ, augetur plerumque ejus resiliendi vis; mollities autem necessario minuitur. Imminutâ vero adhæsione, mollities major fit et vicissim vis resiliendi minor.

82. Causæ horum effectuum certè multiplices sunt: tamen ad certa capita reduci possunt. Aut ipsa materiæ compositio *chemica* vitiatur, aut, salvâ omnino

valetudinem. Verò nonnunquam, transeuntes limites sanitatis, faciunt morbos manifestos, et sanè haud leves.

81. *Omnis pars solida potest variare, aut vitiari duplice modo (in eo) quod (attinet) ad dotes mechanicas; scilicet aut nimiá aut nimis parvâ adhæsione aut mollitie, aut vi resiliendi. Adhæsione seu firmitate cujusvis partis solidæ auctá, plerumque vis resiliendi ejus, augetur; autem mollities necessariò minuitur. Verò adhæsione imminutá, major mollities fit, et vicissim minor vis resiliendi (fit).*

82. *Causæ horum effectuum sunt certè multiplices; tamen possunt reduci ad certa capita. Aut ipsa chemica compositio materiæ vitiatur, aut compositione om-*

have little effect upon the health. Still sometimes they overpass the limits of health, and produce evident diseases of no slight description.

81. Every solid part may vary, or be disordered in two ways, in what relates to its mechanical properties; namely, either by excess or diminution of adhesion, flexibility, or elasticity. The adhesion or firmness of any part being increased, generally its elasticity is increased also; but the softness is necessarily diminished. When cohesion is diminished, there is more softness, and consequently less elasticity.

82. The causes of these effects are indeed manifold, but admit of being reduced to certain heads. Either the che-

compositione, particulæ ita disponuntur, ut plus minusve fortiter semet invicem attrahant. Quod compositionem ejus *chemicam* attinet, omnia fortasse elementa (77, 78), varia quantitate, solido animali inesse possunt, et suum quodque peculiare vitium efficere. Sed de multis horum nihil certi novimus: satis vero constat, materiam humidam, quæ fere aqua est, et siccam, quæ ex diversis elementis constat, multum variare: quo plus humidæ, eo minus adhæsionis aut vis resiliendi, plus vero mollitiei; et contra omnino, si nimium siccæ materiæ in compositione fuerit.

83. Variæ sunt causæ re-

nino salvâ, particulæ ita disponuntur, ut attrahant semet invicem plus minusve fortiter. Quod attinet ad compositionem chemicam ejus, fortasse omnia elementa (77, 78) *possunt inesse animali solido, variâ quantitate (et) efficere suum quodque peculiare vitium. Sed novimus nihil certi de multis horum; vero satis constat, materiam humidam, quæ est ferè aqua, et (materiam) siccam, quæ constat ex diversis elementis, variare multùm; quo plus sit humidæ (materiæ), eò minus (erit) adhæsionis aut vis resiliendi, vero erit plus mollitiei; et contra omnino, si fuerit nimium siccæ materiæ in compositione.*

83. *Variæ causæ remotæ*

mical composition of the substance is disordered, or with this composition entirely in a sound state, the particles may be so arranged, that they mutually attract each other more or less forcibly. As to its chemical composition, perhaps, all the elements may be present in the animal solid, in different quantities, and produce each of them its peculiar disorder. Of this we know nothing certain; but there is ample evidence, that the moist substance which is almost water, and the dry substance which consists of the different elements, vary amazingly; the more moisture there is, the less cohesion or elasticity, there will be, but more softness; and altogether the reverse, if there be too much dry matter in the composition.

83. There are various remote causes of excessive or

motæ (37 et seq.) alterutrius materiæ vel abundantis vel deficientis. Ipsa imprimis constitutio corporis congenita multum huc confert. Quidam, præ cæteris, homines et viri præ fæminis in universum, duriorem et sicciorem corporis compaginem habent, vix, ac ne vix quidem, ullo vitæ genere penitus mutandam.

84. Ætas vero majus adhuc discrimen facit; a prima enim ad ultimam usque siccius et durius evadit quotidie corpus: a fluido, nempe, et crudo fœtu, ad rigidum et exsuccum senem, cui vita, propter hanc ipsam causam, fere deficit.

85. Victus porro, quo homines utuntur, prout plus minusve aquosa fuerit, similem solidarum partium

sunt (37 et seq.) vel abundantis vel deficientis alterutrius materiæ. Imprimis ipsa constitutio congenita corporis multum huc confert. Quidam homines præ cæteris, et viri præ fœminis universum habent duriorem et sicciorem compaginem corporis, vix, ac ne quidem vix, penitus mutandam ullo genere vitæ.

84. *Verò ætas facit adhuc majus discrimen; enim corpus evadit quotidie siccius et durius a primâ usque ad ultimam (ætatem); nempe a fluido et crudo fœtu, ad rigidum et exsuccum senem; cui vita ferè deficit, propter hanc causam ipsam.*

85. *Porrò victus, quo homines utuntur, efficit similem conditionem partium solidarum, prout (victus) fuerit*

defective matter of either kind. The congenital constitution of the body especially contributes much to this. Some men, compared with others, and males compared with females in general, possess a harder and drier frame of body, which is scarcely susceptible of change by any mode of living whatever,

84. Age makes a still greater difference, for the body becomes daily harder and drier, from first to last; namely, from the state of the fluid and ill formed fœtus, to the rigid and sapless old man, in whom life fails on account of this very cause.

85. Moreover the food which men use produces a similar condition of the solid parts, according as the food is more or

conditionem efficit. Hoc, in aliis animalibus dudum observatum, in homine quoque, aliquatenus saltem accidere videtur. Neque ratio gravissima deest cur credamus, non corporis modo conditionem et vires, sed et animi indolem, a victus genere quodammodo pendere.

86. Multum quoque pendet a bonâ vel pravâ ejusdem cibi concoctione, et ab appositione nutrimenti ex eo parati.

87. Denique, status aëris, scilicet, quod ad humorem vel siccitatem, corpus haud parum afficit. Hinc monticolæ, vel qui siccas regiones habitant, ab incolis humidarum et paludosarum multum diversi.

plus minùsve aquosa. Hoc dudum observatum in aliis animalibus, videtur accidere, quoque in homine saltem aliquatenùs. Neque ratio gravissima deest cur credamus, non modo conditionem et vires corporis, sed et indolem animi pendere quodammodo a genere victùs.

86 *Quoque multum pendet a bonâ vel pravâ conditione ejusdem (cibi) concoctione, et ab oppositione nutrimenti parati ex eo.*

87. *Denique status aeris scilicet (in eo) quod (attinet) ad humorem vel siccitatem, afficit corpus haud parum. Hinc monticolæ vel (illi) qui habitant siccas regiones (sunt) multum diversi ab incolis (regionum) humidarum et paludosarum.*

less watery. This circumstance, already observed in other animals, likewise occurs in man, at least to a certain extent. Nor is there any very cogent reason why we should not consider, that not only the condition and strength of the body, but also the disposition of the mind, depends in some degree on the kind of food.

86. Much also depends upon the good and depraved state of the food, by boiling, and the disposal of the nutriment obtained from it.

87. Lastly, the state of the air in reference to moisture, or dryness, affects the body considerably. Hence the inhabitants of mountains, or those living in dry districts, are different from the inhabitants of damp and marshy countries.

88. Postremo, vitæ genus ad eundem effectum nonnihil confert. Exercitatio corporis, quod nimium humoris fuisset, exprimit atque exhalat. Ignavia contrarium prorsus effectum habet, partesque humidiores abundare facit.

89. Verum, salvâ omninò compositione *chemicâ* solidarum partium, harum conditio ab aliis causis multùm affici potest. Densatio nimirum particularum, sive a causis *mechanicis*, sive a calore et frigore, variam efficiet partis cujuslibet firmitatem et vim resiliendi.

90. Quantum hic valeat compressio *mechanica*, clar. *Clifton Wintringham* experimenta luculentèr docent.—Distentio quoque *solidi animalis* dotes ejus jam memoratas haud pa-

88. *Postremò genus vitæ nonnihil confert, ad eundem effectum. Exercitatio corporis, exprimit et exhalat, quod humoris fuisset nimium. Ignavia habet prorsus contrarium effectum, que facit partes humidiores abundare.*

89. *Verum, compositione chemicâ harum partium omnino salvâ, conditio harum potest affici multùm ab aliis causis. Nimirum densatio particularum, sive a causis mechanicis, sive a calore et frigore, efficit variam firmitatem et vim resiliendi cujuslibet partis.*

90. *Quantum compressio mechanica hic valeat, experimenta clarissimi Clifton Wintringham luculentèr docent. Quoque distentio animalis solidi afficit haud parum dotes ejus jam memora-*

88. Lastly, mode of life contributes somewhat to the same effect. Exercise of the body presses out and exhales the fluid which is in excess; indolence has a contrary influence, and causes the more moist parts to be abundant.

89. But, even if the chemical composition of these parts be entire, the condition of them may be much affected by other causes; for instance, thickening of the particles, either from mechanical causes, or from heat and cold, produces a different degree of firmness and elasticity of any part.

90. The experiments of the illustrious Clifton Wintringham lucidly demonstrate the influence of mechanical pressure: distension, likewise, of the animal solid, affects

rum afficit. Quo plus tenditur, eo durius, et firmius, et magis resiliens evadit, eoque difficiliùs ulteriorem patitur distentionem, donec tandem, ampliùs distendi impatiens, novâ admotâ vi, distrahitur et dirumpitur, superatâ nimirum particularum adhæsione, quâ hæc debilior fuerit. Hinc ratio, non plenè quidem (nam multùm pendet a principio vitali, primâque corporis fabricâ) sed aliquatenus saltem, deducenda est multarum rerum quæ summi momenti sunt; corporis incrementi, status, imminutionis, firmitatis indies crescentis, et mortis senilis inevitabilis.

91. Varia fortasse solidarum partium densitas ab

tas. Quò plus animale solidum tenditur, eò evadit durius, et firmius, et magis resiliens, que eò difficiliùs patitur ulteriorem distentionem donec tandem, impatiens distendi ampliùs, vi novâ admotâ, distrahitur et dirumpitur, nimirum adhæsione particularium superatâ, quâ hæc fuerit debilior. Hinc ratio non plenè quidem (nam multum pendet a vitali principio, que fabricâ primâ corporis) sed aliquatenus saltem est deducenda multarum rerum quæ sunt summi momenti; (scilicet ratio) incrementi corporis, statûs, imminutionis, firmitatis crescentis indiès, et inevitabilis mortis senilis.

91. *Fortasse varia densitas solidarum partium deri-*

in no slight degree the properties already mentioned. The more the animal solid is stretched, the harder and firmer, and more elastic it becomes; and with so much more difficulty does it admit of further distension, until at length, not bearing increased distension, if a fresh force be applied, it is torn and ruptured; that is to say, the cohesion of the particles is overcome in the part in which it was weaker. Hence a reason, not manifest, indeed, (for much depends upon the vital principle, and the primary fabric of the body) is to be deduced, of many things of the greatest importance; namely, the reason of the increase of the body, of the stature, and decay, of the daily increasing strength, and of the inevitable death of old age.

91. The various density of the solid parts is possibly

ipsâ Naturâ derivatur. Sed magis constat de viribus exercitationis, aut ignaviæ, in statu earundem mutando. Quarum igitur effectus generales, tam boni quam mali, in partibus solidis, facile intelligentur.

92. Porro, diuturnâ quiete, pars quælibet natura mobilis, veluti junctura artus, paulatim rigescit, pristinam mobilitatem tardè, fortasse nunquam penitus, recuperatura: et contra, valido et crebro usu, modo hic non nimius fuerit, omnes fere corporis partes miram sæpe adipiscuntur mobilitatem. Neque profectò melius datur aut certius remedium ad superandam illam rigiditatem artuum quæ longâ quiete induci solet, quam frequens

vatur ab naturâ ipsâ. Sed magis constat de viribus exercitationis, aut ignaviæ, in mutando statû earundem effectus generales quarum (virium) tam boni quam mali, in partibus solidis igitur, facilè intelligentur.

92. *Porrò, quælibet pars mobilis naturâ (suâ), veluti junctura artûs, paulatim rigescit, diuturnâ quiete, recuperatura tardè pristinam mobilitatem fortasse nunquam penitus: et contra, fere omnes partes corporis sæpe adipiscuntur miram mobilitatem valido et crebro usû, modo hic (usus) non fuerit nimius. Neque profectò melius aut certius remedium datur, ad superandum illam rigiditatem artuum, quæ solet induci longâ quiete, quam frequens exer-*

derived from nature itself. But there is greater evidence of the influence of exercise, or indolence, in changing their condition; the general effects of these, either good or bad, upon the solid parts, will be therefore easily understood.

92. Any part naturally enjoying motion, as the joint of a limb, gradually becomes rigid by long continued rest, and recovers its former mobility slowly, and perhaps never completely: on the other hand, nearly all parts of the body often acquire a surprising degree of mobility, by active and frequent use, provided it be not in excess. Nor, indeed, is there a better or more sure remedy, for recovering from the rigidity of the joint, which is apt to be brought on by long rest, than frequent exercise; which (is) at first difficult, and

exercitatio, quæ primo difficillima, et diu exigua, fere indies facilior, liberior, et perfectior evadit.

93. Calor corpora omnia laxat atque expandit: frigus vero densat et durat. Utrumque effectum homines probè experiri solent. Quamvis corpus suum ferè semper calorem conservet, fieri nequit quin ejus superficies saltem ab aëre ambiente externo afficiatur. Neque exigua vis est, quâ calor hoc modo in universo corpore polleat. Quam longè aliter se habet, qui, fervido Austro spirante, hebes et languidus factus, membra sua ægrè trahit, ac ille, qui, sub frigido Aquilone, cursu glaciali se exer-

citatio, quæ primò difficillima, et diù exigua, ferè evadit indies facilior, liberior et perfectior.

93. *Calor laxat, atque expandit omnia corpora: vero frigus densat, et durat (omnia corpora). Homines probè solent experiri utrumque effectum. Quamvis suum corpus conservet ferè semper suum calorem, nequit fieri quin superficies ejus saltem afficiatur ab aëre externo ambiente. Neque est vis exigua, quâ calor polleat hoc modo, in universo corpore. Quam longè aliter (ille) habet se, qui factus hebes et languidus (sub) fervido Austro spirante trahit sua membra ægrè, ac ille, qui, sub frigido Aquilone, exercet se cursu glaciali, firmus (secundum)*

for some time of very limited, (but) commonly becomes daily, more practicable, more free, and more perfect.

93. Heat relaxes and expands all bodies; but cold thickens and hardens them. Men are accustomed to experience both effects. Although the body may commonly preserve its temperature, the surface at least must be affected by the external ambient air. Nor is that influence slight, by which heat prevails in this way, in the whole system. What a difference between the individual, who, exposed to the hot southern blasts, is rendered dull and languid, and scarcely drags his limbs along, and him, who, under the cold northern winds, exercises himself on the icy tracks, strong, active, and nimble in his entire frame.

cet, universum corpus firmus, mobilis, expeditus.

94. Variæ causæ, quæ singulæ tot modis dotes *solidi animalis* afficere solent, conjunctæ majores adhuc effectus præstant: docent experimenta a *Bryan Robinson* instituta; docent effectus balnei calidi; docet quotidiana experientia.

95. Ex hac materia variæ corporis partes, variis muniis aptæ, fiunt. Nondum certâ fide constat, quænam sit *solidi animalis* ultima et minutissima fabrica: Sive ex fibris, filis scilicet longis, parum latis, varie inter se textis, constet, ut docet *Boerhaavius*; sive ex fibris serpentinis, mirum in modum convolutis, ut quædam observationes nuper factæ

totum corpus, mobilis, (et) expeditus.

94. *Variæ causæ, quæ (quùm) singulæ solent afficere dotes animalis solidi tot modis; (cum) conjunctæ præstant effectus adhuc majores: experimenta instituta à Bryan Robinson docent (ed); effectus balnei calidi docent; quotidiana experientia docet.*

95. *Variæ partes corporis, aptæ variis muneribus, fiunt ex hâc materiâ. Nondum constat certâ fide, quænam sit ultima et minutissima fabrica animalis solidi: Sive (illud) constet ex fibris, scilicet longis filis, parum latis, textis variè inter se, ut Boerhaavius docet; sive (constet) ex fibris serpentinis, convolutis in mirum modum, ut quædam observa-*

94. Various causes, which when separate affect the properties of the animal substance in so many ways, produce still greater effects when combined: this we are taught by the experiments made by Bryan Robinson, by the effects of the warm bath, and by daily experience.

95. Various parts of the body, adapted to the different functions, are formed by this substance. There is nothing known for certain, what is the ultimate and most minute structure of the animal solid; whether it is composed of fibres, or long threads nor broad, variously interwoven, as Boerhaave teaches; or of serpentine fibres admirably convoluted, as late observations seem to inculcate; or whether the cellular substance is composed of fibres and laminæ (or plates), and the chief

suadent; sive ex fibris laminisque *tela cellulosa* fiat, et ex hac maxima pars omnium partium corporis, ut celeb. *Hallerus* ostendere conatus est.

96. De fibris earumque dotibus, alibi locus erit dicendi (109, et seq.) *Tela cellulosa* ubique in corpore observatur; fibras ipsas, quæ in multis partibus satis manifestè apparent, circundat et nectit, et varias partes, quæ motum aliquem in vicinas habere debent, leviter. conjungit. Eadem probè densata, firmissimas, et quæ videntur tenuissimæ, membranas facit: Quarum quæ simplicissimæ apparent, accuratiùs exploratæ, hanc structuram ostendunt.

97. Crescit sæpe mirum in modum *tela cellulosa*,

tiones nuper factæ suadent; sive tela cellulosa fiat ex fibris que laminis, et maxima pars omnium partium corporis fiat ex hâc, ut celeberrimus. Hallerus conatus est ostendere.

96. *Locus erit dicendi alibi de fibris que dotibus earum (*109, *et seq.) Tela cellulosa observatur ubique in corpore; circundat et nectit fibras ipsas, quæ apparent satis manifestè in multis partibus, et leviter conjungit varias partes quæ debent habere aliquem motum in vicinas (partes). Eadem probè densata facit membranas firmissimas, et quæ videntur (esse) tenuissimæ; quarum (illæ) quæ apparent simplicissimæ, exploratæ accuratiùs ostendunt hanc structuram.*

97. *Tela cellulosu sæpè crescit in mirum modum,*

part of the body is formed by it; as the celebrated Haller endeavoured to demonstrate.

96. There will be elsewhere a place for treating of fibres and their properties. Cellular substance is observed in all parts of the body; it surrounds and connects the fibres themselves, which are evident in different parts, and loosely unites various parts, which ought to exert some motion on those adjacent. The same substance being condensed forms the firmest and thinnest membranes; and those membranes which appear very simple, when examined more accurately, show this structure.

97. The cellular substance and parts composed of it, such

partesque ex ea factæ, membranæ, vasa, &c. imprimis lenta distensione; subita autem distentio eam vel rumpit, vel tenuiorem facit. Crescit quoque nonnunquam inter partes vicinas, easque jungit quas Natura liberas fecerat. Hujusmodi concretiones præter naturam sæpè observantur, post inflammationem pulmonis vel viscerum abdominis:—Et novæ istæ membranæ verè *cellulosæ* sunt.

98. Concrescit etiam suâ sponte, si secta vel alio modo separata fuerit. Quod si ingente inflammatione, et suppuratione facta, magna pars *telæ cellulosæ* destructa fuerit, tunc non renovatur, et fœda cicatrix relinquitur.

99. Quin et pars, ut fertur, vel ejusdem, vel alieni

quæ partes factæ ex eâ (scilicet) membranæ, vasa, &c. imprimis lentâ distensione; autem subita distentio vel rumpit eam, vel facit (eam) tenuiorem. Quoque nonnunquam crescit inter partes vicinas, que jungit eas quas Natura fecerat liberas. Concretiones hujusmodi præter naturam sæpe observantur, post inflammationem pulmonis vel viscerum abdominis:—Et istæ novæ membranæ verè sunt cellulosæ.

98. *Etiam (tela cellulosa) crescit suâ sponte, si fuerit secta vel separata alio modo. Quod si magna pars telæ cellulosæ fuerit destructa ingente inflammatione, et suppuratione factâ, tunc non renovatur, et fæda cicatrix relinquitur.*

99. *Quin et pars vel ejusdem vel alieni corporis*

as membranes, vessels, &c. frequently become enlarged to a wonderful extent, principally from slow distension; sudden distension ruptures it, or renders it more thin. It increases sometimes also between neighbouring parts, and unites those which nature had intended to be free. Unnatural adhesions of this description are observed, after the inflammation of the lungs or abdominal viscera. These new membranes are truly cellular.

98. It likewise increases spontaneously, if cut, or separated in any other manner; but if a considerable portion of it has been destroyed by slight inflammation or consequent suppuration, it is not renewed, but an ugly cicatrix is left.

99. Moreover a part of the same, or another body, as it is

corporis, alii interdum jungi potest hujusmodi concretione. Hoc, si ullo fundamento, nitebatur ars *Taliacotii;* et alia nupera multùm jactata, dentes transponendi.

100. *Tela cellulosa* est aliis partibus reticulata, aliis adipe referta. Scilicet, ubicunque magna moles, aut compressio, periculo aut incommodo fuissent, veluti in capite, pulmone, oculis, palpebris, pene, scroto, ibi nullum adipem colligit, sed laxa et pure reticulata est. At, inter musculos corporis et artuum, sub cute et in abdomine, imprimìs in omento et circa renes, plurimus adeps secernitur et colligitur.

101. Adeps purum oleum

(ut fertur), interdum potest jungi alii concretione hujusmodi. Ars Taliacotii nitebatur hoc, si ullo fundamento: et alia nupera multùm jactata (scilicet ars) transponendi dentes.

100. *Aliis partibus tela cellulosa est reticulata, aliis (est) referta adipe. Scilicet, ubicunque, (est) magna moles aut compressio, fuissent periculo aut incommodo, veluti in capite, pulmone, oculis, palpebris, pene, scroto, ibi colligit nullum adipem, sed est laxa et purè reticulata. At plurimus adeps, secernitur et colligitur inter musculos corporis et artuum, sub cute et in abdomine, imprimis in omento et circa renes.*

101. *Adeps est purum*

related, may sometimes be united to another, by a growing together of this description. The Taliacotian art rested in this, if there be any foundation for it; likewise the lately boasted art of transplanting teeth.

100. In some parts the cellular substance is reticulated, in others filled with fat; for wherever a great mass or compression would cause danger or inconvenience, as in the head, lungs, eyes, palpebræ, penis, and scrotum, there is no fat collected, but the membrane is loose and purely reticulated. Much fat is secreted and collected between the muscles of the body and limbs, under the skin, in the abdomen, especially in the omentum and about the kidneys.

101. Fat is a pure animal oil, slightly differing from the

animale est, ab oleis herbarum crassis et mitibus parùm diversus; in vita fluidus; sed variis partibus crassior aut tenuior. A sanguine secernitur, in ipsum facilè, et sæpè subitò, resorbetur, quamvis rarissimè sincerum oleum vel adeps in sanguine conspiciatur.

102. Verisimile est oleum per digestionem, partim in ventriculo et intestinis, partim in pulmone, in *fibrinam*, *gelatinam*, et *albumen* converti; et hæc iterum per secretionem in oleum revertere. Nulla profectò adipis organa secernentia ostenduntur. Oportet tamen istiusmodi sint; et fabrica quoque specialis *telæ cellulosæ* earum partium, quæ debent habere adipem,

oleum animale parùm diversus[28] *ab oleis crassis et mitibus oleis herbarum; (est) fluidus in vitâ; sed crassior aut tenuior variis partibus. (Adeps) secernitur a sanguine, resorbetur, facilè, et sæpe subitò in ipsum, quamvis rarissimè oleum sincerum vel adeps conspiciatur in sanguine.*

102. *Verisimile est oleum converti per digestionem in fibrinam, gelatinam, et albumen, partim in ventriculo et intestinis, partim in pulmone; et (verisimile) est hæc iterum revertere in oleum per secretionem. Profectò nulla organa secernentia adipis ostenduntur. Oportet tamen (ut) sint (organa) istiusmodi, et (ut sit) quoque fabrica specialis telæ cellulosæ ea-*

thick and bland oils of plants: it is fluid during life; but is thicker and thinner in the different parts. It is secreted from the blood, and is easily and often suddenly reabsorbed into it; yet pure oil or fat can very rarely be seen in the blood.

102. It is probable that oil is converted by means of digestion into fibrine, gelatine, and albumen, partly in the stomach and intestines, partly in the lungs, and that these are again converted by secretion into oil. No organs for the secretion of fat can be shown, still there must be such, as well as a particular structure of the cellular substance of those parts which ought to contain fat, that they may retain

28. *Diversus*, agreeing with *adeps*.

ut oleum jam secretum contineant neque ad alias transire sinant. Nam in partes purè reticulatas viam sibi nunquam aperit, quamvis per *telam cellulosam* facilis via sit aëri aut aquæ per totum corpus a capite ad calcem.

103. In tenero fœtu nihil adipis, in maturo parum reperitur. Infantes verò, modò benè aliti sint, ferè solent pinguescere, donec ambulare et propriis viribus semet exercere incipiant; tum graciles fiunt, et sic manent ad virilem usque ætatem, quâ minus crebrâ et validâ uti solent exercitatione. Tum quadrati fiunt et sæpè obesissimi: matura senectute, paulatim denuò marcescunt. Puellæ

rum partium, quæ debent habere adipem, ut contineant oleum jam secretum, neque sinant (illud) transire ad alias (partes). Nam nunquam aperit sibi viam in partes purè reticulatas, quamvis sit facilis via per telam cellulosam aeri aut aquæ per totum corpus a capite ad calcem.

103. *Nihil adipis reperitur in tenero fœtu parum (adipis reperitur) in maturo fœtu. Verò infantes modò sint bene aliti, solent pinguescere, donec incipiant ambulare et exercere semet propriis viribus, tum fiunt graciles, et manent sic usque ad virilem ætatem, quâ (ætate) solent uti minûs crebrâ et validâ exercitatione. Tum fiunt quadrati et sæpè obesissimi: denuò paulatim marcescunt matura*

the oil when secreted, nor allow its transit to other parts; for it never finds its way into parts purely reticulated, although they easily transmit air and water through the whole body, from the head down to the foot.

103. No fat is found in the young fœtus, and little when it is mature. Infants, however, if well nourished, usually become fat, until they begin to walk and exercise their own strength; they then become thin, and remain so till manhood, when they take less frequent and active exercise: at that period they become very corpulent; they gradually become again emaciated in mature old age. Girls in some degree become fat about puberty, whence their smooth, rounded,

vero quodammodo pinguescunt circa ætatem puberem; unde forma nitida, teres, amabilis adeo, et apta premi: et ferè omni ætate, fœminæ plus quam viri pinguescunt. Viri quoque habitum corporis laxi et flaccidi firmioribus obesiores fiunt.

senectute. Verò Puellæ pinguescunt quodammodo circa ætatem puberem; unde (est) forma nitida teres, adeo amabilis, et apta premi; et ferè omni ætate, fœminæ pinguescunt plus quam viri. Quoque viri laxi et flaccidi (secundum) habitum corporis, fiunt obesiores firmioribus.

104. Colligitur adeps usu multi cibi, oleosi, nutrientis, ex carnibus præsertim (modo concoctio bona sit) et potus validi, cerevisiæ imprimis, et animi et corporis quiete et tranquillitate, multo somno et torpore, castratione, frigore, sanguinis detractione repetita, multisque aliis exinanitionibus; quicquid scilicet, salvâ sanitate, vires vitales et animales, et imprimis solitas excretiones, minuit,

104. *Adeps colligitur usû multi cibi, oleosi, nutrientis, præsertim (cibi confecti) ex carnibus (modo sit bona concoctio) et potus validi, imprimis cerevisiæ, et quiete et tranquillitate animi et corporis, multo somno et torpore, castratione, frigore, repetitâ detractione sanguinis, que multis aliis exinanitionibus; scilicet salvâ sanitate, quicquid minuit vires vitales et animales, et imprimis solitas excretiones,*

lovely form, so suited for embraces; and almost at every age, females are more corpulent than men. Men also of a lax and flaccid habit of body, are more corpulent than those of firmer fibre.

104. Fat is accumulated by the use of much oily, nutritious food, particularly animal food (provided the digestion be good), by strong drink, especially beer, by rest and tranquillity of the mind and body, by much sleep and torpor, castration, cold, repeated blood-letting, and most other evacuations; for, in a sound state of health, whatever diminishes the vital and animal powers, and especially the usual excretions, is favourable to its production. A great deal however depends

huic favet. Multùm vero pendet ab ipsius corporis habitu, neque homo, ut bos, ad libitum saginari potest.

105. Certa, secundum ætatem hominis, obesitas, prosperæ valetudinis signum est et effectus. Nimia vero, ipsa morbus est, et aliorum morborum causa. Semper verò et certissimè debellanda, si modo fuerint bona voluntas et vis animi, validâ corporis exercitatione, brevi somno, parcâ et siccâ diæta. Nec facilè miles gregarius repertus fuerit, qui de tali morbo conqueratur.

106. Adeps semper partem haud exiguam corporis facit, aliquando maximam. Non est igitur dubitandum, quin suos usus habeat. Motum faciliorem et libe-

favet huic. Verò multum pendet ab habitû ipsius corporis, neque homo, ut bos, potest saginari ad libitum.

105. *Certa obesitas secundum ætatem hominis est signum et effectus prosperæ valetudinis vero nimia (obesitas) est ipsa morbus, et causa aliorum morborum. Verò (obesitas) semper et certissimè debellanda est, (modo si fuerit bona voluntas et vis animi), validâ exercitatione corporis, brevi somno, diætâ parcâ et siccâ. Nec facile miles gregarius repertus fuerit, qui conqueratur de tali morbo.*

106. *Adeps semper facit haud exiguam partem corporis, aliquando (facit) maximam (partem). Igitur non dubitandum est, quin habeat suos usus. (Adeps) reddit*

upon the habit of body, since man cannot be fattened at pleasure like an ox.

105. A certain degree of corpulency is an indication and effect of good health. Too great a share of it is a disease in itself, and a cause of other diseases. It may be always overcome (provided there be intention and firm resolution) by powerful exercise of the body, by little sleep, by sparing and dry diet. A common soldier is not easily found, who complains of such a disease.

106. Fat always forms a great part, and sometimes the greatest part of the body. Therefore beyond doubt, it has its uses. It renders motion more easy and free, by oiling

riorem reddit, partes movendas oblinendo, et sic frictionem minuendo. Hoc modo, ne abradantur solidæ partes, quod aliter fieret, impedit; nec sinit partes vicinas concrescere, quod aliquando fit, si ulcere vel alio casu, pars aliqua telæ quæ adipem continebat destructa fuerit.

107. Quin, et ad corporis formam et pulchritudinem haud parum confert, magna interstitia inter musculos implendo, quæ corpus deforme et horrendum redderent. Justa autem pinguedine, hoc, nitidum, teres, atque rotundum fit. Porro, adeps colorem dat candidum, cereum, qui, roseo mixtus, venustissimum oris colorem efficit. Hinc fit, ut puellæ, male metuentes

motum faciliorem et liberiorem, oblinendo partes movendas, et sic minuendo frictionem. Hoc modo, impedit, ne solidæ partes abradantur, quod fieret aliter; nec sinit partes vicinas concrescere, quod fit aliquando, si pars aliqua telæ, quæ continebat adipem, destructa fuerit ulcere vel alio casû.

107. *Quin confert haud parum ad formam et pulchritudinem corporis, implendo magna interstitia inter musculos, quæ (interstitia) redderent corpus horrendum et deforme. Autem hoc, (i. e. corpus) fit nitidum, teres atque rotundum justâ pinguedine. Porrò, adeps dat colorem candidum, cereum, qui mixtus roseo, efficit colorem venustissimum oris. Hinc fit,*

the parts which are to be moved, and in this way diminishes friction. It thus prevents the abrasion of the solid parts, which must otherwise take place, and does not allow the neighbouring parts to grow together, as sometimes occurs when some part of the membrane, which contained the fat, is destroyed by ulceration or other accidents.

107. It contributes no little to the form and beauty of the body, by filling up the interstices between the muscles, which would produce horrible deformity. By means of a due degree of corpulency, the body becomes smooth and rounded. Moreover fat gives that fair, waxen colour, which when mixed with the rosy tint, forms the most beautiful complexion. Hence it is, that girls, foolishly fearing too much cor-

ne nimis pinguescant, et medicamentis, diæta, vitæ genere, marcescere conantes, cum nitido corporis habitu, oris quoque venustatem perdere soleant.

ut puellæ male metuentes, ne nimis pinguescant, et conantes marcescere (se) medicamentis, diætâ, et genere vita, soleant perdere cum nitido habitû corporis, quoque venustatem oris.

108. Nutrire creditur adeps ex suis cellulis in sanguinem resumptus. Sed hoc minus certum est. A frigore quodammodo defendit; animalibus regionum frigidarum magna copia datus.

108. *Adeps (cum) resumptus ex suis cellulis in sanguinem creditur nutrire. Sed hoc est minus certum. Quodammodo defendit a frigore: (adeps) datus (est) magnâ copiâ animalibus regionum frigidarum.*

pulency, and endeavouring to reduce themselves by medicines, diet, and mode of life, lose, together with their comely habit of body, their beautiful complexion.

108. Fat is thought to nourish, when reabsorbed from its cells into the blood. But this is by no means certain. In some manner it protects from cold, (hence a reason that) fat is supplied in such abundance to the animals of the cold regions.

Cap. III.—*De solido vivo, seu genere nervoso, ejusque dotibus, fabrica, et usibus; nec non de conjecturis quæ circa ejus naturam et functiones prolatæ sunt.*

109. Solida *viva*, vel *vitalia*, dicuntur partes solidæ quæ sensum et mobilitatem habent. Hæ dotes, a vita pendentes, cum ea incipiunt et desinunt. Dotes vero partium solidarum, de quibus (75, et seq.) dictum fuit, etiam post mortem supersunt.

110. Partes autem, quæ vel sensum, vel mobilitatem, vel utrumque habent, sunt cerebrum, cerebellum, *medulla oblongata*, *medulla spinalis*, nervi ex his ori-

Cap. III.—*De vivo solido, seu (de) genere nervoso, que (de) dotibus, fabricâ et usibus ejus; nec non de conjecturis quæ prolatæ sunt circa naturam et functiones ejus.*

109. Partes *solidæ, quæ habent sensum et mobilitatem, dicuntur solida viva, vel vitalia. Hæ dotes, pendentes a vitâ, incipiunt et desinunt cum eâ. Verò dotes partium solidarum, de quibus dictum fuit (75, et sequentibus) supersunt etiam post mortem.*

110. *Autem partes, quæ habent aut sensum vel mobilitatem vel utrumque, sunt cerebrum, cerebellum, medulla oblongata, medulla spinalis et nervi oriundi ex his,*

Chap. III.—*On the living, solid, or nervous system, on the properties, structure, and uses of it; also on the conjectures which have been promulgated, concerning its nature and functions.*

109. The solid parts which enjoy sensation and motion are called, living or vital solids. These properties, depending upon life, begin and terminate with it. But those properties of the solid parts, which were spoken of at section 75, and following sections, remain even after death.

110. The parts which enjoy sensation or motion or both, are the Cerebrum, Cerebellum, Medulla Oblongata, Medulla

undi, per totum fere corpus diffusi, in varia singulorum sensuum organa et musculos impensi, et demum musculi ipsi.

diffusi ferè per totum corpus; impensi in varia organa sensuum singulorum et (in) musculos, et demum musculi ipsi.

111. Sensus multo magis generalis est quam mobilitas, quippe qui omnibus partibus jam recensitis communis sit, quamvis plane per nervos solos fiat. Mobilitas vero solis fibris musculosis est propria. Ubicunque igitur sensus est, ibi nervi; ubicunque vero mobilitas observatur, ibi fibræ musculosæ videntur esse.

111. *Sensus est multò magis generalis quam mobilitas, quippe qui sit communis omnibus partibus jam recensitis, quamvis fiat planè per nervos solos. Verò mobilitas est propria fibris musculosis solis. Igitur ubicunque est sensus, ibi nervi sunt; verò ubicunque mobilitas observatur, ibi fibræ musculosæ videntur esse.*

112. Quin et mobilitas ipsa a nexu, quem musculi cum nervis, &c. habent, pendere videtur: nam resecto, vel compresso, vel ligato nervo, musculi quibus impendebatur, mobilitatem

112. *Quin et ipsa mobilitas videtur pendere a nexû, quem musculi habent cum nervis, &c.: nam, nervo resecto vel compresso vel ligato, musculi quibus (nervus) impendebatur, brevi (tempore)*

Spinalis, and nerves arising from them, spread generally through the whole body, upon the various organs, separate senses and muscles, and lastly the muscles themselves.

111. Sensation is much more general than motion, for it is common to all the parts above-mentioned, although it takes place evidently by means of the nerves alone. Mobility is confined solely to the muscular fibres. Therefore, wherever there is sensation there are nerves; and wherever motion is observed there appear to be muscular fibres.

112. Mobility itself seems to depend upon the connection between the muscles and nerves; for if a nerve be cut, compressed, or tied, the muscles on which it was distributed, in a short time lose their mobility, or peculiar contractile

suam, seu vim propriam contrahendi, brevi amittunt; nec aliter res se habet, si cerebrum ipsum, vel origo nervorum, male affecta fuerint.

113. Sunt qui credunt musculos a nervis oriri et formari, et ex eadem materia constare. Utrique sane similem structuram habent, quatenus ex fibris valde minutis constent; utrique albi sunt, dummodo musculi probe eloti, et a sanguine, quem multum continent, purgati fuerint: Neque ope *microscopii* ullo modo distingui possunt fibræ nervosæ quæ bene multæ musculos subeunt, ab ipsis fibris musculosis. Porro, idem sensus utrisque est, et stimulantia et sedantia medicamenta eosdem plane effec-

amittant suam mobilitatem, seu vim propriam contrahendi; nec res habet se aliter, si cerebrum ipsum vel origo nervorum, male affecta fuerint.

113. *(Homines) sunt, qui credunt musculos oriri et formari nervis, et constare ex eadem materiâ. Sanè utrique habent similem structuram, quatenùs constent ex fibris valdè minutis, utrique sunt albi, dummodo musculi fuerint bene eloti, et purgati, a sanguine quem multum continent: Neque fibræ nervosæ quæ benè multæ subeunt musculos possunt ullo modo distingui ab ipsis fibris musculosis, ope microscopii. Porro est idem sensus utrisque; et stimulantia et sedantia medicamenta edunt planè eosdem*

power. The same takes place, if the brain itself, or commencement of the nerves, be disordered.

113. There are some men, who consider that the muscles arise from, and are formed by the nerves, and consist of the same substance. They both certainly have a similar structure, inasmuch as they consist of very minute fibres; both are white, provided the muscles be well washed and cleansed from the blood, which they contain in considerable quantity; nor can the very numerous nervous fibres which enter the muscles be in any degree distinguished from the muscular fibres themselves, by the assistance of a microscope. Moreover there is the same sensation in both, for stimulants and sedatives evidently produce the same effects in the mus-

tus in musculis edunt, sive ipsi musculo, sive nervo qui eum adeat, admota fuerint.

114. Quantis difficultatibus prematur scientia originis multarum corporis partium, alibi locus erit dicendi; sive omnes eodem tempore, sive alias post alias, certo ordine produci credamus. Interea tamen non dissimulandum est, partes quasdam musculosas perquam mature in fœtu conspici, et insignem vim et robur jam adeptas esse, quum cerebrum ipsum adhuc molle et fere fluidum reperitur; earumque actionem ad hujus functionem et augmen requiri; et musculos semper partibus vere nervosis multo firmiores esse, et vim propriam, irritabilem nimirum, habere,

effectus in musculis, sive admota fuerint ipsi musculo, sive nervo, qui adeat eum.

114. *Alibi erit locus dicendi, quantis difficultatibus scientia originis multarum partium corporis prematur; sive credamus omnes (partes) produci certo ordine eodem tempore, sive (credamus) alias (partes produci) post alias. Interea tamen non dissimulandum est, partes quasdam musculosas conspici perquam maturè in fœtû, et jam adeptas esse insignem vim et robur, quum cerebrum ipsum reperitur adhuc molle et fere fluidum; que actionem earum (partium musculosarum) requiri ad functionem et augmen ejus; et musculos semper esse multo firmiores partibus vere nervosis, et habere vim pro-*

cles, whether they be applied to the muscle itself, or to the nerve which enters it.

114. There will be elsewhere an opportunity of speaking of the difficulties which obstruct the knowledge of the origin of many parts of the body; whether we should consider them all as produced in certain order at the same time, or in succession one after the other. Nevertheless, it cannot be dissembled that certain muscular parts are observed very early in the fœtus, and have already acquired considerable power and strength, whilst the brain itself is found still soft and nearly fluid, and that the action of these parts is required for its functions and increase; and likewise that muscles are much firmer than parts merely nervous, and have a

quam nervi nunquam participant.

priam, nimirum, irritabilem, quam (vim) nervi nunquam participant.

115. Oportet, igitur, vel ex diversa musculi constituti fuerint materia, ab ea ex qua nervi fiunt, vel, si ex eadem utrique constent, hæc fabricæ prorsus diversæ sit in his, ac in illis, ut vires adeo dissimiles habeat. Quod si, igitur, diversa sit musculorum ac nervorum substantia, tum facile patebit multam substantiam nervosam cum musculosa semper misceri. Nam *acicula* tenuissima non potest in musculum adigi, quin inde simul multi ramuli nervosi pungantur vel lacerentur; ut dolor clare testatur (111).

115. *Igitur oportet, (ut) vel musculi constituti fuerint ex diversa materiâ, ab eâ ex quâ (materiâ) nervi fiunt, vel, si utrique constent ex eâdem (materiâ), hæc (materia) sit prorsùs diversæ fabricæ in his ac in illis, ut habeat vires adeò dissimiles. Quod si, igitur, substantia musculorum ac nervorum sit diversa, tum facilè patebit multam substantiam nervosam misceri semper cum musculosâ. Nam tenuissima acicula non potest adigi in musculum, quin inde multi ramuli nervosi simul pungantur vel lacerentur: ut dolor clarè testatur* (111).

116. Igitur tam arctus inter musculos nervosque

116. *Igitur nexus tam arctus intercedit inter mus-*

peculiar property, namely irritability, of which the nerves never partake.

115. It must be, that the muscles are formed of matter different from that of the nerves, or if both are formed of the same, their structure must be different, in order that their properties should be so dissimilar. Therefore, if the substance of the muscles and nerves be different, it will be very clear that much nervous substance is mixed up with the muscles; for the finest needle cannot be inserted into a muscle without many nervous ramifications being pricked or lacerated; as pain evidently shows. (111)

116. Therefore, there is such a very close connection be-

intercedit nexus, tum quod ad officium attinet quo funguntur, tum quod ad fabricam quam habent, ut merito omnia *solida viva* pro partibus ejusdem generis habeantur, cui nomen *Genus Nervosum* a medicis imponi solet.

117. Miræ quas hæ partes possident dotes medicorum et philosophorum attentionem optimo jure sibi vindicarunt: plurimique et ingeniosissimi viri (inter quos summum *Neutonum* numerare oportet) operam haud exiguam collocarunt in causis earundem investigandis, modoque perscrutando quo variæ ipsarum functiones fierent; variasque quæ singulis placebant de his rebus conjecturas in medium protulerunt. Nondum vero ra-

culos que nervos, tum (in eo) quod attinet ad officium quo funguntur, tum quod ad fabricam, quam habent, ut meritò omnia solida viva habeantur pro partibus ejusdem generis, cui nomen Genus Nervosum solet imponi a medicis.

117. *Miræ dotes, quas hæ partes possident, vindicarunt sibi optimo jure attentionem medicorum et philosophorum: que plurimi et ingeniosissimi viri (inter quos oportet numerare summum Neutonum) collocarunt haud exiguam operam in investigandis causis earundem, que perscrutando (de) modo, quo variæ functiones ipsarum fierent; que protulerunt in medium varias conjecturas de his rebus quæ (conjecturæ) placebant*

tween the muscles and nerves, both in their functions and structure, that all the living solids may be considered as parts of one kind, to which the name of nervous system has been given by medical men.

117. The wonderful properties possessed by these parts, deservedly claimed the attention of medical men and philosophers: and many very ingenious men (amongst whom must be enumerated the illustrious Newton) took no little pains in investigating the causes of them, and inquiring into the manner in which their different functions were performed; they likewise published the various conjectures formed individually upon these matters. But as yet no rational mode of investigating the subject by experiment,

tio ulla proposita est rem per experimenta explorandi; et experientia bis mille annorum satis superque demonstravit sapientissimos etiam hominum Naturæ arcana conjectando rarissime detegere. Male omnino *Neutoni* nomine, nunquam non venerando, abusi sunt scriptores nonnulli, qui opinionem quam tueri cuperent in ejus auctoritatem rejecerunt totam: quamvis ille, solita modestia et prudentia (quas laudare quam imitari plerique auctores maluere) suam de hac re sententiam, pro conjectura tantum seu quæstione proposuerit, idoneis experimentis et argumentis aut refellenda aut confirmanda. Sed ne quidem *Neutoni* conjecturas pro veris sumere licet: non

singulis. Vero nondum ulla ratio explorandi rem per experimenta proposita est; et experientia bis mille annorum demonstravit satis superque, etiam sapientissimos homines rarissime detegere arcana Naturæ conjectando. Nonnulli scriptores omnino male abusi sunt nomine Neutoni, nunquam non venerando, qui rejecerunt opinionem quam cuperent tueri in auctoritatem ejus; quamvis ille, solitâ modestiâ et prudentiâ (quas plerique auctores maluere laudare quam imitari) proposuerit suam sententiam de hâc re, pro conjecturâ tantùm seu quæstione, aut refellendâ aut confirmandâ idoneis experimentis et argumentis. Sed licet sumere conjecturas ne quidem Neutoni pro veris; ille non sic (est) imi-

has been proposed: and the experience of two thousand years has more than adequately shown, that the most learned can very rarely discover the arcana of nature by conjecture. Some writers have greatly and basely abused the name of Newton, ever to be venerated, by referring their opinion to his authority; although he, with his usual modesty and caution (which many authors would rather commend than imitate,) gave his opinion on this subject, as conjecture or a query only, to be refuted or established by proper experiments and arguments. But we must not receive the conjectures even of a Newton as truths: this is not the way to imitate him; nor in this way can science be advanced.

sic ille imitandus; non sic scientia promovenda.

118. Variæ profecto sententiæ, de modo quo sensus motusque in corpore animali fiunt, prolatæ sunt; omnibus vero hoc fundamentum commune est, fortasse et vitium quoque, nempe, quod rationem utriusque petant a motibus quibusdam *Generi Nervoso* propriis et peculiaribus, ab organo sensus incipientibus, et per nervos ad cerebrum propagatis, dum sentimus; et a cerebro incipientibus, perque nervos (sive eosdem qui sensui inserviunt, sive alios omnino diversos et distinctos, quamvis in eundem fasciculum cum illis colligatos) ad musculos delatis, dum musculos nostros ad arbitrium movemus.

tandus; sic scientia non promovenda (est).

118. *Profecto variæ sententiæ prolatæ sunt de modo, quo sensus que motus voluntarius fiunt in corpore; verò hoc est commune fundamentum, fortasse et vitium quoque omnibus, quod petant rationem utriusque a motibus quibusdam propriis et peculiaribus Generi Nervoso, incipientibus ab organo sensûs, et propagatis per nervos ad cerebrum, dum sentimus; et incipientibus a cerebro, que delatis ad musculos per nervos (sive eosdem qui inserviunt sensui, sive alios omnino diversos et distinctos, quamvis colligatos in eundem fasciculum) dum movemus musculos nostro arbitrio.*

118. Various, indeed, are the opinions which have been advanced, concerning the manner in which the sensations and voluntary motion take place within the body; but the common foundation, and, perhaps, error of all, consists in this, that they seek for an explanation of both in certain motions, proper and peculiar to the nervous system, which, during sensation, beginning from the organ of sense, are propagated by means of the nerves to the brain; (and which), during voluntary muscular action, begin in the brain, and are conveyed to the muscles by the nerves, either the same which are subservient to sensation, or others quite different and distinct, although bound up into the same fasciculus.

119. Hos motus alii crediderunt per ipsam substantiam nervorum fieri, trementium vel vibrantium, ut vocabant, non secus ac lyræ chordæ tremunt plectro percussæ.

120. Alii, quibus bene perspectum erat quam male accommodati essent nervi et cerebrum ad tales perficiendos et propagandos tremores vel motus (quippe qui toti mollissimi existant, et vicinarum partium tactu multum impediti, vel sæpe etiam ad vicinas partes alligati sint) motus, quos fieri et necessarios esse contendebant, in humorem tenuem et valde mobilem rejecerunt, quem nervis inesse fingebant, inque iis suis legibus moveri, multasque et miras

119. Alii crediderunt hos motus fieri, per ipsam substantiam nervorum, trementium vel vibrantium, ut vocabant, non secus ac chordæ lyræ (cùm) percussæ plectro.

120. Alii, quibus erat bene perspectum quam malè nervi et cerebrum essent accommodati ad perficiendos et propagandos tales tremores et motus (quippe qui existant toti mollissimi, et sint impediti multum tactû partium vicinarum vel (sint) etiam alligati ad partes vicinas) rejecerunt motus, quos contendebant fieri et esse necessarios, in tenuem et valdè mobilem humorem, quem (illi) fingebant inesse nervis, que moveri in iis suis legibus, que possidentem[29]

119. Some considered, that these motions take place through the medium of the substance of the nerves, trembling, or vibrating as they term it, in the same way as the strings of the lyre, when struck by the plectrum.

120. Others, who perceived how ill the nerves and brain were fitted for perfecting and propagating such tremors and motions, (inasmuch as they are all very soft, and are much obstructed by contact, or by being bound down to neighbouring parts), referred the motions, which they admitted were produced and were necessary, to some subtile and very active fluid, which they imagined to be in the nerves, and is moved

29. *Possidentem* seems to be necessary to complete the sense of this sentence, for it refers to *humorem*, and if it stood in the present tense, indicative mood, it must be read *possidet*, with *qui* understood.

dotes et excellentias possident.

121. Alii demum ad Ætherem Universalem potius confugerunt, qualem et nuper et olim multis philosophis persuasum est totum mundum pervadere, implere, variisque legibus temperare; cujus ope et ministerio sidera mearent, sol fulgeret, mare cresceret decresceretque, flumina laberentur, venti spirarent, plantæ pullularent, Jupiter ipse tonaret.—Utilissimus certe et strenuissimus æther, sed nusquam prehensus, nusquam ad quæstionem deductus, ut sui rationem redderet, Proteo ipso mutabilior et fugacior, diu multumque jam frustra agitatus, tandem requiescat in pace.

multas et miras dotes et excellentias.

121. *Alii demùm potiùs confugerunt ad Ætherem Universalem, qualem et nuper et olim persuasum est multis philosophis pervadere implere, que temperare totum mundum variis legibus, ope et ministerio cujus, sidera mearent, sol fulgeret, mare cresceret que decresceret, flumina laberentur, venti spirarent, plantæ pullularent, ipse Jupiter tonaret. Certè æther est utilissimus et strenuissimus, nusquam deductus ad quæstionem, ut redderet rationem sui, mutabilior et fugacior Proteo ipso, agitatus jam frustra que diu multum, tandem requiescat in pace. Nam quæ spes prehendendi (illud)*

in them by certain laws, and possesses many wonderful properties and virtues.

121. Lastly, others have had recourse to an universal æther, such as formerly and lately many philosophers were persuaded, pervaded, filled, and governed the whole universe by certain laws; by the aid and attendance of which, the stars moved, the sun shone, the sea rose and fell, the rivers glided along, the winds blew, the plants shot forth, and Jupiter himself thundered. Truly æther is a very useful and powerful agent, but has never been brought to give an account of itself, more changeable and fleeting than Proteus himself, agitated so long, and to no purpose, at last let the subject rest in peace: for what hope is there of catching "what is allowed to assume so many forms?"

Nam quæ spes prehendendi "*cui in plures jus est transire figuras?*"

"Nam modo te juvenem, modo te videre leonem,
"Nunc violentus aper; nunc quem tetigisse timerent.
"Anguis eras; modo te faciebant cornua taurum:
"Sæpe lapis poteras, arbor quoque sæpe videri.
"Interdum, faciem liquidarum imitatus aquarum,
"Flumen eras; interdum, undis contrarius ignis."

"cui jus est transire in plures figuras?" Nam modo (illi) vidêre te (quam) juvenem, modo (vidêre) te leonem; nunc (eras) violentus aper; nunc eras anguis, quem (homines) timerent tetigisse: modo cornua faciebant te taurum: sæpe poteras videri lapis quoque sæpe (poteras videri) arbor; interdum, eras flumen imitatus faciem limpidarum aquarum; interdum eras ignis contrarius undis.

122. Male vero de his aut similibus commentis medici prius disputaverint, quam vel observando vel experiendo, demonstratum fuerit, talem æthera existere, talesque in *genere nervoso* motus fieri; vel saltem credibile factum fuerit, talibus conjecturis nodum solutum iri. Concessis enim omni-

122. *Autem medici, male disputaverint de his aut similibus commentis prius, quam demonstratum fuerit, vel observando vel experiendo, talem æthera existere, que tales motus fieri in genere nervoso; vel saltem fuerit factum credibile, nodum solutum iri talibus conjecturis. Enim omnibus con-*

"For now a man's or lion's form it takes,
"Now a rude boar's, and now an odious snake's;
"A bull's majestic front is oft thine own;
"And oft thou seem'st a tree, and oft a stone:
"Now in a bubbling stream thou dost aspire;
"And water's foe, now creep in crimson fire."

ORGER'S OVID, book 8th, line 941.

122. But medical men did wrong to discuss these and similar conjectures, before it was demonstrated either by observation or experience, that such æther exists, and that such motions take place in the nervous system, or it was at least made probable, that the difficulty would be solved

bus de æthere et motibus in *genere nervoso* postulatis, parum omnino proficitur; nam tremores nervorum vel motus ætheris, qualescunque commentorum hujusmodi amantissimi sibimet fingere potuerint, nusquam aut sensus erunt, aut sensui similes, aut in sensum, secundum notas Naturæ leges, unquam mutabiles.

123. Nec facilè quisquam ostenderit quo pacto voluntas animi, cui voluntati nihil inest corporei, tenuissimum, et subtilissimum, mobilissimumque æthera, facilius aut melius quam saxum afficeret, eumque in motus conjiceret.

124. Nec melior hoc modo aut magis perspicua ratio redditur sensuum qui dicuntur interni; memoriæ

cessis de æthere et motibus postulatis in genere nervoso, omnino parum efficitur; nam tremores nervorum vel motus ætheris, qualescunque (illi) amantissimi commentorum hujusmodi potuerint fingere sibimet, nusquam erunt aut sensus, aut similes sensui, aut unquam mutabiles in sensum secundum notas leges Naturæ.

123. *Nec quisquam facilè ostenderit quo pacto voluntas animi (cui voluntati nihil corporei inest) afficeret tenuissimum, et subtilissimum que mobilissimum ætherem faciliùs aut melius quam saxum, que conjiceret eum in motus.*

124. *Nec hoc modo melior aut perspicua ratio redditur sensuum, qui dicuntur interni; scilicet (ratio) memo-*

by such conjectures. For every thing being admitted concerning æther, and the necessary motions in the nervous system, little is gained by it; for the tremours of the nerves, or motions of the æther, of whatever description the warmest admirers of such conjectures imagined them to be, will never be sensation, or like sensation, or capable of being changed into it, by any of the known laws of nature.

123. No one will easily be enabled to show, in what way volition of the mind, (in which volition there is nothing corporeal,) can affect that finest, most subtile, and most active æther, more easily than a stone, and could put it into motion.

124. There is no better or clearer explanation of the sen-

scilicet, imaginationis, et judicii. Vix credibile erit motus ullos in *genere nervoso* retineri et condi, nostro arbitrio denuo erupturos et renovandos; neque impressiones, aut vestigia, aut imagines ullas eorum motuum in cerebro imprimi, veluti sigilli in cera, quas ad arbitrium nostrum iterum iterumque contemplemur, motusque qui eas primo effecissent denuo integremus. Tamen validissima sæpe est sensuum præteritorum renovatio, recordantibus, imaginantibus, somniantibus.

125. Quod si tales motus ad internorum æque ac externorum sensuum actionem necessarii sunt, tum plane oportebit, vel motus sensum præcedant, vel hic

riæ, imaginationis et judicii. Erit vix credibile ullos motus retineri et condi in genere nervoso, denuò erupturos et renovandos nostro arbitrio; neque impressiones aut vestigia, aut imagines ullas eorum motuum imprimi in cerebro, veluti sigilli (imprimuntur) in cerâ, quas (imagines) contemplemur iterum iterumque ad nostrum arbitrium, que denuò integremus motus, qui primò effecissent eas. Tamen est sæpe validissima renovatio sensuum præteritorum, recordantibus, imaginantibus somniantibus.

125. *Quòd si tales motus sunt necessarii æque ad actionem internorum ac externorum sensuum, tum planè oportebit (ut) vel motus præcedant sensum, vel hic*

sations which are called internal, namely, memory, imagination, and judgment. It can scarcely be believed, that any motions can be retained and accumulated in the nervous system, again to burst forth and be renewed at our pleasure, nor that impressions, or traces, or any images of those motions, can be impressed upon the brain, like a seal upon wax, that we may contemplate them again and again, and may renew the motions which primarily produced them. Nevertheless there is frequently a very powerful renovation of past sensations, in memory, imagination, and dreaming.

125. But if such motions are equally necessary to the action of the internal and external senses, it must evidently be, either that motion precedes sensation, or vice versâ, or

illos, vel denique uno eodemque temporis puncto utrique fiant.—Si prior est sensus, a motu quovis fluidi nervorum oriri nequit, et aliam igitur debet habere causam.—Si prior est motus ille, causa ejus quærenda erit, scilicet qui minime pendere possit a sensu aut voluntate quæ sequuntur. Si demum uterque, motus nimirum et sensus, simul fit, utriusque aliam fingere oportet causam; neuter enim alterius causa esse potest, prius quam ipse existit.

126. Vix sane, aut ne vix quidem, animo concipere possumus mutationem ullam in rebus corporeis fieri, quæ a motu quodam non pendeat, vel saltem cum motu aliquo modo conjun-

(i.e. senus) (præcedat) illos (motus), vel denique utrique fiant uno que eodem tempore.—Si sensus est prior, nequit oriri a quovis motû fluidi nervorum, et igitur debet habere aliam causam.—Si ille motus est prior, causa ejus erit quærenda, scilicet qui possit pendere minime a sensû aut voluntate quæ sequuntur. Si demum uterque, nimirum motus et sensus, simul fit, oportet fingere aliam causam utriusque; enim neuter potest esse causa alterius, prius quam ipse existit.

126. *Vix sane, aut ne quidem vix, possumus concipere animo, ullam mutationem fieri in rebus corporeis quæ (mutatio) non pendeat a quodam motû, vel saltem conjungatur cum motû*

lastly, that both take place in one and the same time. If sensation is first, it cannot arise from any motion of the fluid of the nerves, and therefore must have some other causes. If the motion precedes, its cause must be sought for, since it can by no means depend upon the sensation or volition which follows. Lastly, if both of them, namely motion and sensation, occur simultaneously, some other cause of both must be assigned, for neither can be the cause of the other, before its own existence.

126. We can scarcely, and indeed not possibly conceive, that any change can take place in bodies, which does not depend upon some motion, or be connected with it in some degree. But the subjects treated of here, namely external

gatur. Res vero de quibus hic agitur, sensus nimirum, tum externus tum internus, et voluntas, et conatus demum ad musculos vel artus movendos, non sunt corporeæ, neque iisdem ac tales res principiis explanandæ.

aliquo modo. Vero res, de quibus hic agitur (nobis), nimirum sensus tum externus tum internus, et voluntas, et demum conatus ad movendos musculos vel artus, non sunt corporeæ, neque explanandæ iisdem principiis ac tales res.

127. Missis igitur hujusmodi commentis de rebus quas Natura forsitan visibus humanis negaverit, tanquam ad inutilia, et incomprehensibilia, vel absurda fortasse, ducentibus, magis e re sua erit, si medici ad singulas res factas et veras de hoc argumento investigandas semet gnaviter accinxerint.

127. *Igitur commentis hujusmodi missis, de rebus, quas Natura forsitan negaverit visibus humanis, tanquam ducentibus ad inutilia, et incomprehensibilia, vel fortasse absurda, erit magis e suâ re, si medici gnaviter accinxerint semet ad investigandas singulas res factas et veras de hoc argumento.*

and internal sensation, volition, and the efforts to move the muscles or limbs, are not corporeal, nor explicable on principles which may be applied to them.

127. Therefore, conjectures of this kind being laid aside concerning things which nature perhaps has hidden from men's eyes, as conducing to useless, incomprehensible, and absurd ideas, it will be more to the purpose, if medical men vigorously apply themselves to investigate the truths and facts connected with this subject.

Cap. IV.—*De sensu generatim, ejusque varietatibus, usibus, voluptatibus, molestiis et vitiis.*

128. Sensus nulla definitione eget, neque reverà facile definiri potest; quippe quo nihil fere simplicius sit, aut melius intellectum. Describi tamen, vix autem explanari solet, hujusmodi verborum circuitu, longo et parum accurato, et quidem satis inepto;—Mutatio cujus conscii sumus in statu animi, mutatione aliqua in statu corporis effecta.

129. Utcunque verò simplex primo aspectu sensus videatur, philosophi, rem

Cap. IV.—*De sensû generatim, que de varietatibus usibus, voluptatibus, molestiis et vitiis ejus.*

128. *Sensus eget nullá definitione, neque reverà potest facilè definiri; quippe quo, sit fere nihil simplicius, aut melius intellectum. Tamen solet describi, autem vix explanari, longo et parum accurato et quidem satis inepto, circuitû verborum hujusmodi;—Mutatio in statû animi, cujus sumus conscii aliquá mutatione effectá in statû corporis.*

129. *Verò utcunque sensus videatur simplex primo aspectû, philosophi perscru-*

Chap. IV.—*On sensation generally, on its varieties, uses, pleasures, and disorders.*

128. Sensation requires no definition, nor indeed can it be easily defined; for there is scarcely any thing more simple, or better understood. However it is usually described, but hardly explained, by a long, inaccurate, and indeed inappropriate circumlocution of this description: "A change in the state of mind, of which we are conscious, produced by some change in the state of the body."

129. But however simple sensation may appear at first sight, philosophers who have inquired into the subject more

accuratiùs perscrutati, duplicem ejus naturam se detexisse crediderunt, et ideo monent probe esse distinguendum inter duas res ad sensum pertinentes, quæ vulgo sub uno eodemque nomine comprehendi solent; quamvis profecto nemo sanus existat tam stupidus qui res ipsas confuderit; et sane perperam omnino talem vulgo hominum errorem objecerunt philosophi.

130. Harum rerum altera (mutatio nimirum quæ in animi statu efficitur) ad animum solum spectat, et huic propria est, suâ naturâ fugax et peritura, et simul simplicissima, nullisque aut definienda aut describenda verbis, rei externæ quæ sensum excitat dissimillima,

tati rem accuratiùs crediderunt se detexisse duplicem naturam ejus, et ideo monent probe distinguendum esse inter duas res pertinentes ad sensum, quæ res vulgo solent comprehendi sub uno que eodem nomine; quamvis profectò nemo sanus existat tam stupidus qui confuderit res ipsas; et sanè philosophi objecerunt omnino perperam talem vulgo errorem hominum.

130. *Altera harum rerum (nimirum mutatio quæ efficitur in statû animi) spectat ad animum solum, et est propria huic, fugax et peritura suâ naturâ, et simul simplicissima, que aut definienda aut describenda nullis verbis, dissimillima rei externæ quæ excitat sensum,*

minutely, have thought, that they have discovered it as being of twofold description, and therefore teach us, that distinction is to be made between the things which relate to sensation, in which those things are commonly comprehended in the same name; although, in truth, no sensible man can be so stupid as to confound them: but indeed philosophers have rashly set this forth as a common error.

130. One of these, namely, the change made in the state of the mind, refers to the mind only, and is peculiar to it, fleeting and perishable in its nature, at the same time most simple, and capable of being defined or described by no terms, most unlike the external object which excites sensation, very different from every state and nature of the body,

ab omni corporea conditione atque natura alienissima, ita ut neque ipsa, nec quicquam ipsi simile, in re externa quam percipimus inesse possit.

131. Altera vero res quæ vulgo sub nomine sensus comprehenditur, qualitas nimirum quævis rei externæ quam contemplamur, quam sensus (mutatio scilicet in animi statu) nobis representat vel suggerit, longe diversæ videtur esse naturæ.—Qualitates enim rerum externarum, quas sensus ope percipimus, ad illas res solas pertinent; neque animo ullo pacto inesse possunt, nec quicquam cum animo, variisque ejus statibus, simile aut commune habent, sua natura constantes et durabiles, sive perceptæ a

alienissima ab omni corporeâ conditione atque naturâ, ita ut neque ipsa, nec quicquam simile ipsi, possit inesse in re externâ, quam percipimus.

131. *Verò altera res quæ vulgò comprehenditur sub nomine sensûs, nimirum qualitas quævis rei externæ quam contemplamur, quam sensus (scilicet mutatio in statû animi) representat vel suggerit, videtur esse naturæ longè diversæ. Enim qualitates rerum externarum, quas percipimus ope sensûs, pertinent ad illas res solas; neque possunt inesse animo ullo pacto, nec habent quicquam simile aut commune cum animo que variis statibus ejus, constantes et durabiles suâ naturâ, sive fuerint perceptæ a nobis sive*

so that neither itself, nor any thing like it, can exist in the external objects which we perceive.

131. The other thing which is commonly understood by the word sensation, that is, any quality of an external object which we contemplate, which the sensation (namely the change in the state of mind) represents or suggests, appears to be of a very different nature. For the qualities of external things, which we perceive by the aid of sensation, relate to them alone, nor can exist in the mind in any degree, nor can they have any thing alike or in common with the mind or its different states; (they) are constant and lasting in their nature, whether they are perceived by us, or unknown and neglected, nor are (they) so simple, but that many of them

nobis fuerint, sive ignotæ aut neglectæ, neque adeo simplices, quin multæ saltem earum, facile et accurate definiri aut describi, et inter se invicem comparari, possint.

132. Plurimam profecto et utilissimam de rebus externis scientiam, facillimo et simplicissimo modo, per varios sensus, visum præsertim et tactum, sine ullo studio aut labore acquirimus; ita ut bene perspicuum sit, hoc (quadam saltem ex parte) consilio, istas sentiendi facultates a Supremo Opifice nobis esse datas. Non omnes vero sensus hunc usum præstant; neque tam facilis ad totius Naturæ scientiam patet via: et sane multa ostendunt, varios quibus instruimur

(fuerint) ignotæ aut neglectæ, neque adeo simplices, quin saltem multæ earum possint facilè et accuratè definiri aut describi, et comparari inter se invicem.

123. *Profectò acquirimus plurimam et utilissimam scientiam de rebus externis, facillimo et simplicissimo modo, per varios sensus, præsertim (per) visum et tactum sine ullo studio aut labore: ita ut sit bene perspicuum (saltem ex quadam parte), istas facultates sentiendi datas esse nobis a Supremo Opifice, hoc consilio. Vero non omnes sensus præstant hunc usum; neque via tam facilis patet ad scientiam totius Naturæ: et sane multa ostendunt, varios sensus, quibus instruimur,*

admit of ready and accurate definition or description, and may be mutually compared with each other.

132. Truly, we acquire much and most useful knowledge, concerning external objects, in a most easy and simple manner, (that is) by means of the various senses, particularly by sight and by touch, without any study or difficulty; so that, it is very evident, (to some extent at least,) that these faculties of the senses were given by the Supreme Maker for those very purposes. All the senses do not answer this purpose, nor is there so clear a path to the knowledge of all nature: but many things show that the various senses, with which we are supplied, are frequently subservient to other important uses.

sensus, aliis sæpe et eximiis usibus inservire.

133. Fit sensus in homine sano et vigili, quandocunque status partis cujusvis *generis nervosi* aliquantum mutatus fuerit, sive ista mutatio ab externa causa, sive ab interna, facta sit.—Qui a priore causa fiunt sensus, ab impressione vel impulsu; qui a posteriore causa fiunt, a conscientia, apud medicos, dicuntur esse.

134. Neque ab omni sane impulsu in *genus nervosum* fit sensus. Ut sentiamus, oportet certa vi aut impetu in partem sensu præditam impulsus factus sit. A leviore enim impulsu, sensus obscurus aut plane nullus est; ab impulsu autem multo vehementiore, dolor

sæpe inservire aliis et eximiis usibus.

133. *Sensus fit in homine sano et vigili, quandocunque status partis cujusvis generis nervosi fuerit aliquantùm mutatus, sive ista mutatio sit facta ab externâ causâ, sive ab internâ (causâ). Sensus qui fiunt a priore causâ dicuntur (apud medicos) esse ab impressione vel impulsû; (sensus) qui fiunt a posteriore causâ, (dicuntur esse) a conscientiâ.*

134. *Neque sane fit sensus ab omni impulsû in genus nervosum. Ut sentiamus, oportet, (ut) impulsus sit factus certâ vi aut impetû in partem præditam sensû. Enim sensus est obscurus aut planè nullus a leviore impulsû: autem dolor fit, ab impulsû multò vehemen-*

133. Sensation takes place in a man, healthy and awake, whenever the state of any portion of the nervous system be in some degree changed, whether that change arises from an external or internal cause. Sensations which occur from the former cause, are said by medical men, to be from impression or impulse; but those arising from the latter cause, (are said to be) from consciousness.

134. Sensation is not produced by every impulse upon the nervous system. In order that we have perception, it is necessary that the impulse be made with a certain force and impetus on the part endowed with sensation. For sensation is dull, or quite unperceived from a slighter degree of impulse, but pain is produced if the impulse be much more

fit, sine ullo distincto sensu; quod si impulsus demum vehementissimus fuerit, tantaque vis parti sentienti illata fuerit, ut organi ipsius fabrica lædatur, tum stupor fere oritur.

135. Neque perbrevis impulsus sive impressio, quamvis alioquin satis vehemens, distinctum sensum efficit; nimirum ad quem temporis aliquod, et diuturnitas quædam impressionis, requirantur.—Docent corpora, et quidem satis magnæ molis, tanta velocitate mota, ut conspici nequeant.—Par quoque ratio est multorum dolorum, quos præstigiatores solent exhibere; quibus hominibus, *Axioma*, et quasi artis totius fundamen-

tiore, sine ullo distincto sensû; quod si impulsus demùm fuerit vehementissimus, que tanta vis fuerit illata parti sentienti, ut fabrica organi ipsius lædatur, tum ferè stupor oritur.

135. *Neque impulsus sive impressio perbrevis, quamvis alioquin satis vehemens, efficit distinctum sensum; nimirum ad quem, aliquod temporis, et quædam diuturnitas impressionis requirantur.—Corpora docent, et quidem molis satis magnæ mota tantâ velocitate, ut nequeant conspici.—Quoque est par ratio multorum dolorum,*[30] *quos præstigiatores solent exhibere; quibus hominibus, solet esse, Axioma, et quasi fundamentum totius artis,*

powerful, and there is no distinct sensation; and, lastly, if the impulse be of a most violent character, and so much violence be applied to the sentient part, that its structure is injured, stupor is then generally produced.

135. A rapid impulse or impression, although otherwise sufficiently powerful, does not produce a distinct perception; for instance, such an one as requires some time, and a certain period of impression. We are taught this by bodies of some magnitude, which are moved with such velocity that they cannot be seen. There is the same explanation of the tricks which jugglers are accustomed to exhibit, with which men, it is an axiom, and as it were a fundamental

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30. *Dolorum* is the genitive plural of *dolus*, *i.* deceit, a trick, a plot, &c.

tum, esse solet, motum visu multo esse velociorem.

136. Cessante vero impulsu, sublataque ideo externa sensûs causa, ipse qui excitatur sensus, per aliquod, quamvis exiguum, temporis spatium, durare solet.—Docet circulus flammeus, quem conspicimus a rapida rotatione baculi ardentis.

137. Sensus autem non adeo est corporeus quin multum pendeat a statu mentis. Hac enim aliis rebus occupata, impulsus satis validi in organa sensuum facti, vix, aut ne vix quidem, percipiuntur. Contra, si probe animum attendimus, neglectis vixque perceptis gravioribus, levissimos sæpe

motum esse multo velociorem visû.

136. *Verò impulsû cessante, que causâ externâ sensûs idèo sublatâ, ipse sensus qui excitatur, solet durare per aliquod, quamvis exiguum tempus. Circulus flammeus docet, quem (circulum) conspicimus a rapidâ rotatione baculi ardentis.*

137. *Autem sensus non est adèo corporeus, quin multum pendeat a statû mentis. Enim hâc (i. e. mente) occupatâ aliis rebus, impulsus satis validi facti in organa sensuum, vix aut ne quidem vix percipiuntur. Contrà si probe attendimus animum, gravioribus (impulsibus) neglectis que vix*

principle of their art, that motion is much more rapid than vision.

136. But when the impulse ceases, and consequently the external cause of sensation be withdrawn, the sensation, which is excited, usually lasts for some, although for a short time. The fiery ring, which we see by rapidly rotating a burning stick, is a proof of this.

137. But sensation is not so corporeal, that it does not depend considerably on the state of mind. For, if this be employed on other things, impulses, though not inconsiderable, exerted upon the organs of the senses, are scarcely, or not even possibly perceived. On the other hand, if the mind be properly applied, more powerful impulses are neglected and scarcely perceptible, and we are often able with ease to perceive the slightest impressions.

impulsus facile percipere possumus.

perceptis, sæpe possumus facilè percipere levissimos impulsus.

138. Hoc ut videtur fundamento, magnâ saltem ex parte, nititur mirum illud et fere incredibile singulorum sensuum externorum acumen et perfectio, quæ varii homines, variis occupati negotiis, multo usu solent adipisci: quamvis satis sit verisimile perfectionis hujusmodi nonnihil tribuendum esse conditioni organorum, quæ variis modis acui possint crebra exercitatione, et ad propria munera melius aptari. Bene notum est organa motûs hoc modo haud parum proficere.

138. *Illud mirum et fere incredibile acumen et perfectio singulorum sensuum externorum, quæ varii homines occupati variis negotiis solent adipisci multo usû, nititur hoc fundamento, ut videtur, saltem ex magnâ parte: quamvis verisimile sit, nonnihil perfectionis hujusmodi esse tribuendum conditioni organorum, quæ possint acui crebrâ exercitatione variis modis, et melius aptari ad propria munera. Bene notum est organa motûs hoc modo proficere haud parùm.*

139. Attentio a voluntate quodammodo pendet; tamen plerumque datur sensibus validis, novis, jucun-

139. *Attentio pendet quodammodo a voluntate: tamen plerumque (attentio) datur sensibus validis, novis, jucun-*

138. That surprising and nearly incredible acuteness and perfection of the individual senses, which various men occupied in different branches of business, are accustomed to acquire by constant exercise, rests on this principle, as it appears, at least in a great degree; although it is probable, that some of the perfection of this kind, is to be attributed to the condition of the organs, which may be rendered acute, by frequent exercise in different ways, and better fitted to their proper functions. It is well known that the organs of motion receive no inconsiderable benefit in this way.

139. Attention depends in some degree upon the will; yet, it is generally directed to powerful, new, pleasant, and

dis, ingratis, iisque demum qui mentem quivis modo præter solitum afficiunt vel commovent.

140. Hinc tot res vix ac ne vix quidem perceptæ, quamvis idonei in organa sensuum impulsus ab iis facti sint, vel si quodammodo, quamvis minus accurate, perceptæ fuerint, statim oblivioni traditæ. Hinc novæ semper res, cæteris paribus, maxime observatæ, novique sensus validissimi. Hinc sæpe repetiti sensus, quamvis validi, brevi familiares fiunt, et fere negliguntur; debiliores vero impulsus, qui tamen sensum satis validum dare solebant, sæpe repetiti, neque omnino percipi-

dis, ingratis, que demum iis qui afficiunt vel commovent mentem præter solitum quovis modo.

140. *Hinc tot res vix et ne quidem vix perceptæ, statim (sunt) traditæ oblivioni, quamvis idonei impulsus sint facti ab iis in organa sensuum, vel si quodammodo perceptæ fuerint quamvis minus accurate. Hinc semper novæ res, cæteris paribus, (sunt) maximè observatæ, que novi sensus (sunt) validissimi. Hinc sensus sæpe repetiti, quamvis validi, fiunt familiares brevi (tempore) et fere negliguntur; vero debiliores impulsus, qui tamen solebant dare satis validum sensum, sæpe repetiti, neque omnino percipiuntur, neque*

disagreeable sensations, and lastly to those which affect or excite the mind in any unusual manner.

140. Hence so many things which are scarcely and not in any degree perceived, although proper impulses have been made by them upon the organs of the senses, and likewise others in some degree perceived, although less accurately, are immediately committed to oblivion. Hence new things, other circumstances being equal, are always most noticed, and new sensations are the most powerful. Hence sensations often repeated, although powerful, become familiar in a short time, and are commonly neglected; but weaker impulses, which were accustomed to excite sufficiently strong sensation, when frequently repeated, are not at all perceived, nor leave any traces of them in the mind.

untur, neque ulla sui vestigia in animo relinquunt.

141. Sunt qui strenue contendunt hominem inter sentiendum unicum tantum sensum vel rei externæ perceptionem semper contemplari; sed tam facile tamque subito ad suum quodammodo arbitrium ab uno ad alium sensum ire atque redire, ut primo intuitu multos simul capere sibi videatur.—Sed hoc minus certum est.

142. Certissimum vero est hominem sæpe plures sensus ejusdem generis simul percipere, dummodo hi ita conjungi et quasi misceri possint, ut unam perceptionem, a singulis diversam, et ex iis composi-

relinquunt ulla vestigia sui[31] *in animo.*

141. *(Homines) sunt, qui strenuè contendunt inter sentiendum, hominem semper contemplari unicum sensum tantùm vel perceptionem rei externæ; sed (illum) ire atque redire tam facilè atque subitò, ab uno ad alium sensum quodammodo ad suum arbitrium, ut primo intuitû videatur sibi capere multos simul.—Sed hoc est minùs certum.*

142. *Vero certissimum est hominem sæpe percipere plures sensus ejusdem generis simul, dummodo hi possint ita conjungi et quasi misceri, ut efficiant unam perceptionem, diversam a singulis, et compositam ex iis. Hæc*

141. There are some men who strenuously contend, that during sensation, man always contemplates only one sensation or perception of an external object; but, that it goes and returns so suddenly and easily, from one sensation to another, as it were, at its pleasure, that at first glance, he seems to himself to comprehend many at the same time. But this is by no means certain.

142. It is very certain, however, that man often perceives several sensations of the same description at the same time, provided they be so combined, and, as it were, mixed, that they effect one perception, differing from the single ones, and composed of them. This union may be produced, either

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31. *Sui*, of himself, of herself, of itself, is likewise used as a plural pronoun, as *sui*, of themselves.

tam, efficiant. Hæc conjunctio fieri potest vel singulis impulsibus simul factis, vel novis impulsibus prioribus tam subito succedentibus, ut prior sensus nondum desiverit, cum posterior jam inceperit. Sensus enim sæpe diutius quam ipse impulsus durat, præsertim si idonea adhibita fuerit animi attentio (136, 137). Docet sonorum compositio musica; docet charta variis coloribus tincta, quæ rapide in circulum acta, eundem colorem medium vel mixtum, ex aliis compositum, exhibet, ac ipsi colores mixti efficerent. Odores quoque et sapores, singuli, ut videtur, suo genere, pares compositiones accipiunt; quarum aliæ gratæ, aliæ ingratissimæ repe-

conjunctio potest fieri vel singulis impulsibus simul factis, vel novis impulsibus tam subitò succedentibus prioribus ut prior sensus nondum desiverit, cum sensus posterior jam inceperit. Enim sensus sæpe durat diutiùs quam ipse impulsus præsertim si idonea attentio animi fuerit adhibita (136, 137.) *Musica compositio sonorum docet; charta tincta variis coloribus docet, quæ (charta) rapidè acta in circulum, exhibet eundem colorem medium vel mixtum compositum ex aliis, ac ipsi colores mixti efficerent. Quoque odores et sapores accipiunt pares compositiones singuli suo genere, ut videtur: aliæ quarum reperiuntur gratæ, aliæ ingratissimæ. Ars coqui et*

by separate impulses, made simultaneously, or by fresh impulses, so suddenly succeeding the first, that the first sensation has not subsided before the latter sensation has commenced. For sensation often lasts longer than the impulse, particularly if proper attention of the mind be applied, (136, 137). The musical combination of sounds is an instance; there is an example of this in paper tinged with various colours, which, if rapidly moved in a circle, shows the same mean or mixed colour, compounded of the others, as the separate colours, if mixed, would produce. Also smells and tastes admit of like combinations, each in its kind: some of them are found agreeable, others most disagreeable; the art of the cook and perfumer, in a great

riuntur. Hoc fundamento, magna saltem ex parte, nititur ars coqui et unguentarii. Perceptiones vero sive sensus quos tactus dat, tot tamque diversi sunt, ut vix ita conjungi queant, ut unum, quasi medium vel compositum, sensum efficiant.

unguentarii nititur hoc fundamento, saltem ex magnâ parte. Vero perceptiones sive sensus quos tactus dat, sunt tot que tam diversi ut queant vix ita conjungi, ut efficiant unum sensum medium vel compositum.

143. Ex causa quavis externa, impulsu nimirum in organum sensus certa vi facto, et certum tempus durante, varius esse poterit sensus, propter multas res internas corpori sentienti proprias, multasque partes quæ ad sensum efficiendum necessariæ sunt. Animi imprimis ratio habenda est, quod ad attentionem; tum quoque cerebri, quod ad delirium, torporem, somnum, vigiliam, &c.; tum nervorum qui organum sentiens

143. *Sensus poterit esse varius (si) ex quâvis causâ externâ, nimirùm impulsû facto in organum sensûs certâ vi, et durante certum tempus, propter multas res internas proprias corpori sentienti, que (propter) multas partes, quæ sunt necessariæ ad efficiendum sensum. Imprimis ratio animi habenda est quod ad attentionem tum quoque (ratio) cerebri (in eo) quod (attinet) ad delirium, torporem, somnum, vigilium, &c.; tum*

degree, is dependant upon this. But the perceptions or sensations afforded by touch are so numerous and diversified, that they can scarcely be combined, so as to produce one mean or compound sensation.

143. Sensation may vary, if, from any external cause, an impulse be produced on an organ of sense, with a certain degree of force, and continuing a certain time, on account of many internal things, peculiar to the sentient body, and on account of the numerous parts which are necessary to produce sensation. In the first place, account is to be taken of the mind, as to attention of the brain, as to delirium, torpor, sleep, watchfulness, and then of the nerves

adeunt, prout integri, liberi, sani, vel prout compressi, aliterve læsi fuerint; tum finium nervorum ipsius organi, prout magis minusve sentientes fuerint, vel a prima corporis fabricatione, vel ab aliis impulsibus antea factis, vel a calore aut frigore, vel a statu vasorum sanguinem vehentium, quæ minutas nervosas fibras comitantur inseparabilia, quæque vel præter solitum laxari vel distendi, vel demum inflammari possunt; tum denique partium, qualescunque fuerint, rationem habere oportet, quæ fines nervorum tenuissimos et acerrime sentientes tegunt et defendunt, et vim impressionum vel augent vel temperant. Quales sunt cuticula ubique corporis, auris

(ratio) nervorum qui adeunt sentiens organum, prout fuerint integri, liberi, sani, vel prout compressi ve aliter læsi; tum (ratio habenda est) finium nervorum ipsius organi, prout fuerint magis ve minus sentientes, vel a primâ fabricatione corporis, vel aliis impulsibus anteà factis, vel a calore aut frigore, vel a statû vasorum vehentium sanguinem, quæ (vasa) inseparabilia comitantur minutas nervosas fibras, que quæ possunt vel laxari vel distendi præter solitum vel demum inflammari: tum denique oportet habere rationem partium, qualescunque fuerint, quæ tegunt et defendunt fines nervorum tenuissimos et acerrimè sentientes, et vel augent, vel temperant vim

which enter the sentient organ, whether they are sound, free, healthy, or compressed, or otherwise injured: then of the extremities of the nerves of the organ itself, as to being more or less sentient, either depending on the primary structure of the body, or other impulses previously made, or on heat, or cold, on the state of the blood-vessels, which inseparably accompany the minute nervous fibres, and which may be unusually relaxed, or distended, or, lastly, undergo inflammation: we must, lastly, take into account the parts, whatever they be, which cover and protect the very minutely and finely sentient extemities of the nerves, and (which) either increase or modify the force of impressions. Such are, the cuticle of every part of the body, the

tum externa tum interna, ejusque meatus uterque; et varii demum oculi humores.

impressionum. Quales sunt cuticula ubique corporis, tum externa tum interna auris, que uterque meatus ejus; et demùm varii humores oculi.

144. Porro a multis causis internis, nulla aut juvante aut concurrente externa, sensus nonnulli oriuntur. Ipsa mens sui conscia, et varii ejus status, cogitatio, memoria, imaginatio, voluntas, affectus omnes, huc referri possunt. Tum quoque varii corporis status, vigor, debilitas, alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames et sitis, propensiones demum multæ, quales ad tussim, vomitum, alvum evacuandam, et similia, impellunt. Plerosque vero horum sensuum, quatenus corporei

144. *Porro nonnulli sensus oriuntur a multis causis internis, nullâ causâ externâ aut juvante aut concurrente. Ipsa mens conscia sui, et varii status ejus, (scilicet) cogitatio memoria, imaginatio, voluntas, omnes affectus, possunt huc referri. Tum quoque varii status corporis, scilicet, vigor, debilitas, alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames et sitis, demum multæ propensiones, quales impellunt ad tussim, vomitum, (ad) alvum evacuandam et similia. Verò solemus referre ad sensum tactûs, plerosque*

external and internal ear, both its passages, and lastly, the different humors of the eye.

144. Many sensations arise from many internal causes, without any external cause either assisting or concurring. The mind, conscious of itself, and various states of it, such as thought, memory, imagination, will, and all affections, may be referred to this cause. Likewise the various states of the body; such as vigour, debility, cheerfulness, torpor, weariness, pain, anxiety, itching, appetites, such as hunger or thirst; lastly, many inclinations which urge us to cough, vomit, evacuate the bowels, and the like. We are accus-

sunt, ad sensum tactus referre solemus.

145. Sensus, tum externi, tum interni, nunquam accurate ad classes vel genera relati sunt. Externi vero, semper et ubique ad quinque genera referuntur, nempe visum, auditum, olfactum, gustum et tactum. Quod priores quatuor spectat, paucæ corporum externorum qualitates, quas unusquisque eorum percipit, facile in classes a se invicem diversas reducuntur, et ad unum et proprium sensum referuntur. Imprimis, quia sensus ipse singulare et proprium organum habet, neque alibi in corpore insidet, aut quivis modo excitari potest; tum quoque quia sensus organum ab uno genere impul-

horum sensuum, quatenùs (hi sensus) sunt corporei.

145. *Sensus, tum externi tum interni, nunquam sunt relati accuratè ad classes vel genera. Verò (sensus) externi semper et ubique referuntur ad quinque genera, nempe, visum, auditum, olfactum, gustum et tactum. Quod spectat (ad) quatuor priores, paucæ qualitates externorum corporum, quas (qualitates) unusquisque eorum percipit, facilè reducuntur in classes invicem diversas a se, et referuntur ad unum et proprium sensum. Imprimis, quia ipse sensus habet singulare et proprium organum, neque insidet alibi in corpore, aut potest excitari quovis modo; tum quoque quia organum sensûs afficitur ab uno genere impulsûs,*

tomed to refer many of these sensations, inasmuch as they are corporeal, to the sense of touch.

• 145. Both the external and internal sensations have never been accurately referred to classes or genera. But the external ones are always and universally referred to five genera; namely, sight, hearing, smell, taste, and touch. As to the first four, the few qualities of external bodies which each of them perceives, are easily reduced into classes, differing together, and are referred to one and the proper sense. Especially, because the sense itself has its own peculiar organ, nor resides, nor can be produced, in any other part of the body; and because the organ of sense is affected by only one kind of impulse, as of light, tremors of

sus afficitur, veluti lucis, tremorum aëris, particularum volatilium; tum denique quia perceptiones ex singulis istorum sensuum, quantumvis inter se differre videantur, aliquid semper commune habent, ita ut comparari possint earumque similitudines et differentiæ detegi.

146. Hoc verissimum est de rebus quas aures, nares, vel lingua percipiunt. Oculi vero plures res capiunt, easque satis dissimiles; colorem scilicet, figuram, magnitudinem et motum. Omnes tamen hæ perceptiones ad unum sensum facile referuntur, quia per idem organum idemque *medium*, ut vocatur, idemque genus impulsus, percipiuntur. Reliquæ autem perceptiones,

veluti lucis, tremorum aëris, volatilium particularum; tum denique quia perceptiones ex singulis istorum sensuum, quantumvis videantur differre inter se, semper habent aliquid commune, ita ut possint comparari que similitudines et differentiæ, earum possint detegi.

146. *Hoc est verissimum de rebus, quas aures, nares vel lingua percipiunt. Verò oculi capiunt plures res, que eas (res) satis dissimiles; scilicet colorem, figuram, magnitudinem et motum. Tamen omnes hæ perceptiones facile referuntur ad unum sensum, quia percipiuntur, per idem organum que idem medium, ut vocatur, que (per) idem genus impulsûs. Autem reliquæ*

the air, or volatile particles; and, lastly, because the perceptions of the individual senses, although appearing to differ, have always something in common, so that they may admit of comparison, and their resemblance and differences may be detected.

146. This is very true concerning things which the ears, nostrils, or tongue, perceive. But the eyes take in more objects, and of a dissimilar description; namely, colour, size, and motion. Nevertheless all these perceptions are easily referred to one sense, because they are perceived through the same organ, the same medium, as it is called, and the same kind of impulse. But the other perceptions, however dissimilar, are referred to the sense of touch.

utcunque dissimiles fuerint, ad sensum tactus referuntur.

147. Sensus plerique vel grati vel ingrati reperiuntur: scilicet non modo nos de rebus externis monent, earumque qualitates nobis representant, sed animum simul ita afficiunt, ut eosdem sensus vel cupiamus vel nolimus, continuari aut repeti.

148. In quibusdam sensuum exemplis, sensus ipse, mutatio scilicet quæ in animi statu efficitur, jucundus est, et ab eo solo voluptas nascitur. In aliis vero exemplis, non tantum sensus quam perceptio, qualitas nimirum seu conditio rei externæ quam percipimus et sensus ope cognoscimus, voluptatem dat.

perceptiones, utcunque fuerint dissimiles, referuntur ad sensum tactûs.

147. *Sensus plerique reperiuntur grati vel ingrati; scilicet non modo monent nos de rebus externis, que representant nobis qualitates earum, sed simul ita afficiunt animum ut vel cupiamus aut nolimus eosdem sensus, continuari aut repeti.*

148. *In quibusdam exemplis sensuum, sensus ipse, scilicet mutatio quæ efficitur in statû animi est jucundus, et voluptas nascitur ab eo solo. Verò in aliis exemplis, sensus non dat voluptatem tantum quam perceptio, nimirum qualitas seu conditio rei externæ quam percipimus et cognoscimus ope sensûs.*

147. Most of the sensations are agreeable or disagreeable: for, they not only admonish us of external objects, and represent to us their qualities, but at the same time so influence the mind, that we desire or dislike those sensations to be continued or repeated.

148. In some instances of sensations, the sensation itself, that is, the change produced in the state of the mind, is agreeable, and pleasure is derived from it alone; but in other instances, sensation does not so much afford pleasure as perception, that is, the quality or condition of an external object, which we perceive and know by means of the organ of sense.

149. Prioris generis exempla sunt, jucundi sensus seu voluptates quas gustus, olfactus, auditus nobis suggerunt; quibus adjungere oportet sensus quosdam, veluti caloris, quos tactus dat. In his nimirum exemplis ad sensum solum attendimus, neque ab eo quicquid docemur de causa seu qualitate corporis externi quæ sensum efficit. Siquid istiusmodi novimus, id, ope aliorum sensuum et judicii, observando, periclitando, ratiocinando, plane didicimus.

150. Posterioris exempla sunt, perceptiones quædam jucundæ qualitatum rerum externarum, quas vel visus vel tactus nobis suggerunt: veluti pulchritudinis omnis visibilis, formæ, propor-

149. *Jucundi sensus seu voluptates, quas, gustus, olfactus, auditus suggerunt nobis sunt exempla prioris generis; quibus oportet adjungere quosdam sensus, quos tactus dat, veluti caloris. Nimirum in his exemplis attendimus ad sensum solum, neque docemur quicquid ab eo, de causâ seu qualitate corporis externi, quæ qualitas efficit sensum. Si novimus quid istiusmodi, planè didicimus id, ope aliorum sensuum et judicii, observando, periclitando, ratiocinando.*

150. *Quædam jucundæ perceptiones qualitatum rerum externarum, quas (qualitates) vel visus vel tactus suggerunt nobis, sunt exempla posterioris (generis), veluti (qualitas) omnis visi-*

149. The agreeable sensations or pleasures afforded by taste, smell, and hearing, are instances of the first kind; to these we must add certain sensations, as of heat, which is oft conveyed by the touch. In these instances, indeed, we refer the mind to the sensation only, nor learn from it any thing concerning the cause or quality of the external body, which produces sensation. If we have known any thing of it, we have truly learned it by means of the other senses and of judgment, by observation, experiment, and reasoning.

150. Certain agreeable perceptions of qualities of external objects, conveyed to us by sight or touch, are instances of the latter kind: as of every kind of visible beauty,

tionis, motus, et forsitan coloris quoque; vel denique formæ tactilis, aut lævoris aut mollitiei. In his scilicet exemplis perceptio ipsa placet: neglectoque sensu, seu mutato animi statu, ad rem seu qualitatem quam sensus ille suggerit statim transimus, eamque sæpe cum voluptate contemplamur.

151. Difficillimum profecto explanatu videtur, cur tot diversi sensus a variis impressionum generibus in certa corporis organa factarum oriantur (145, 146). Multo autem difficilius explanatu est, cur ab omni fere genere impressionum in varia corporis organa, tales excitentur sensus, quales non modo suam singuli

bilis pulchritudinis, formæ, proportionis, motûs, et forsitan quoque coloris; vel denique formæ tactilis, aut lævoris, aut mollitiei. Scilicet ipsa perceptio placet in his exemplis: que sensû neglecto, statû animi mutato, statim transimus ad rem seu qualitatem quam ille sensus suggerit, que sæpe contemplamur eam cum voluptate.

151. *Profectò videtur difficillimum explanatu, cur tot diversi sensus oriantur a variis generibus impressionum factarum in certa organa corporis* (145, 146). *Autem est multo difficilius explanatu, cur tales sensus excitentur ferè ab omni genere impressionum in varia organa corporis, quales non modo singuli representave-*

form, proportion, motion, and perhaps also of colour; or, lastly, of tangible form, smoothness, or softness. For, the perception itself pleases in these instances; and, if the sensation be neglected, and the state of the mind be changed, we immediately make a transition to the object or quality which that sensation suggests, and often contemplate it with pleasure.

151. It appears, indeed, very difficult of explanation, why so many different sensations should arise from the various kinds of impressions made upon the organs of the body, (145, 146). But it is much more difficult to be explained, why sensations should be excited by nearly every kind of impression upon the different organs of the body, such as

perceptionem (130, 131,) animo representaverint, sed eundem simul vel plurimum delectaverint, vel insigni dolore, angore, molestia, fastidio, affecerint.

152. Sensus enim, utcunque inter se, secundum varia eorum organa, resque quæ hæc afficiunt, diversi, tamen constantes sunt, easdemque semper singuli causas agnoscunt; neque eidem homini, variis temporibus, eadem impressio varium dat sensum seu perceptionem; neque ratio ulla existit, cur credamus eandem rem seu impressionem diversum diversis hominibus sensum aut perceptionem dare, nisi in nonnullis rarissimis exemplis, in quibus verisimile est vitium aliquod, neque sane leve, in corpore

rint suam perceptionem animo (130, 131), *sed delectaverint eundem simul vel plurimum, vel afficerint insigni dolore, angore, molestiâ, (vel) fastidio.*

152. *Enim sensus, utcunque diversi inter se, secundum varia organa eorum, que (secundum) res quæ afficiunt hæc (i. e. organa,) sunt tamen constantes, que semper singuli agnoscunt easdem causas; neque eadem impressio dat varium sensum seu perceptionem eidem homini, variis temporibus: neque ulla ratio existit, cur credamus eandem rem, seu impressionem dare diversum sensum seu perceptionem in diversis hominibus, nisi in nonnullis rarissimis exemplis, in quibus verisimile est aliquod vitium, neque sanè*

not only represent to the mind each its individual perception, (130, 131), but at the same time either afford it considerable delight, or affect it with great pain, anguish, trouble, (or) aversion.

152. For sensations, however different amongst themselves as to their organs, and the circumstances which affect them, are nevertheless constant, and always individually subject to the same causes: the same impression does not afford a different sensation or perception to the same man at different times; nor is there any reason, why we should suppose that the same object or impression affords a different sensation or perception in different men, unless in some very rare instances, in which it is probable that there is

subesse, vel hujus saltem sensuum organa a solito et naturali statu multum alienari.

153. Voluptas vero, vel molestia, vel fastidium, quæ tot sensus comitantur, variant, quam maxime, cum in variis hominibus, tum in iisdem, variis temporibus.

154. Insignis quoque, et fere incredibilis, est vis consuetudinis in voluptates aut molestias sensus; exigua autem in sensum ipsum, et nulla omnino in perceptionem qualitatis rei externæ quam sensus suggerit. Nemo enim sanus, vel naturâ vel ullâ consuetudine, durum pro molli, aut rubrum pro viridi, aut mel pro absinthio, aut absinthium pro melle, percipere potest; quamvis vel singu-

leve, subesse in corpore, vel saltem organa sensuum hujus (corporis) multum alienari a solito et naturali statû.

153. *Verò voluptas, vel molestia vel fastidium, quæ comitantur tot sensus, quam maximè variant, cum in variis hominibus, tum in iisdem, variis temporibus.*

154. *Quoque vis consuetudinis est insignis et ferè incredibilis in voluptates aut molestias sensûs; aut (illa est) exigua in ipsum sensum, et omnino nulla in perceptionem qualitatis rei externæ quam sensus suggerit. Enim nemo sanus, vel naturâ vel consuetudine, potest percipere durum, pro molli, aut rubrum pro viridi, aut mel pro absinthio, aut absinthium pro melle; quamvis vel (a) singulari constitu-*

some disorder, (and that not slight) in the body, or at least, that the organs of sense of this body, are much changed from their usual and natural state.

153. The pleasure, uneasiness, or aversion, which attend so many sensations, vary very much, both in different men, and in the same men at different times.

154. The power of habit also, upon the pleasures and troubles of sensation, is astonishing, and nearly incredible; but it is slight upon sensation itself, and lost completely, upon the perception of the quality of an external object, which is suggested by sensation. For no sensible man, either by nature or habit, can mistake hard for soft, red for green, or honey for wormwood; although, either by pecu-

lari corporis constitutione, vel demum sola consuetudine, amarissima ista herba Hymettio melle gratior et jucundior gustui fieri possit.

155. Quamvis sensus plerique plus minus grati sint, tamen non est negandum, insigne eos inter hac de re discrimen intercedere, et alios naturâ fere omnibus hominibus esse gratissimos, alios valde ingratos, nonnullos demum adeo indifferentes, ut neque voluptatem neque molestiam ullam dent. Hujusmodi sensuum discriminum ratio nulla hactenus reddita est.

156. Est quoddam tamen novisse, unumquodque fere sensuum genus, vel gratum

tione corporis, vel demum solâ consuetudine, ista herba amarissima potest fieri gratior et jucundior gustui melle Hymettio.[32]

155. *Quamvis plerique sensus sint plus (vel) minùs grati, tamen non est negandum, insigne discrimen intercedere inter eos de hâc re, et alios naturâ ferè esse gratissimos omnibus hominibus, alios (esse) valdè ingratos, nonnullos demum (esse) adeo indifferentes ut dent neque voluptatem, neque ullam molestiam. Nulla ratio discriminum sensuum hujusmodi hactenus est reddita.*

156. *Tamen, est quoddam novisse, ferè unumquodque genus sensuum, esse vel*

liarity of constitution or by habit alone, that bitter herb may be more acceptable and agreeable to the palate than Hymettian honey itself.

155. Although most of the sensations are more or less agreeable, it cannot be denied, that there is a great difference between them in this respect, and that some of them are by their nature most pleasing to all men, and that others are very unpleasant, and lastly, that some are so indifferent, as neither to give pleasure or uneasiness. There is no reason given for differences of this description.

156. Nevertheless, it is worth being known, that every

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32. Mount Hymettus, in Attica, was celebrated for its honey, hence *mel hymettium* is used proverbially, to express the best honey.

esse, vel ingratum, natura ejus nil mutata, secundum ipsius vehementiam. Nullus enim existit sensus adeo jucundus, quin ultra modum intensus, ingratus evadat, nonnunquam fere intolerabilis. Et contra omnino, qui natura solitaque vehementia, multum offendunt, leviores facti, tolerabiles sæpe fiunt, et interdum admodum jucundi.

157. Par fere ratio est quod multi sensus, primo grati, delectare cessent, si sæpius repetiti fuerint, quamvis semper ejusdem naturæ et vehementiæ fuerint, quantum ipsam impressionem attinet; et multi primo ingrati displicere desinant, et tandem placeant, quamvis neque natura neque vehementia impressio-

gratum vel ingratum, naturâ ejus mutatâ nil, secundum vehementiam ejus. Enim nullus sensus existit adeò jucundus, quin intensus ultra modum, evadat ingratus, nonnunquam ferè intolerabilis. Et contrà omnino, (sensus), qui multum offendunt, naturâ que solitâ vehementiâ, (cùm) facti leviores, fiunt sæpe tolerabiles et interdum admodum jucundi.

157. Ferè est par ratio quòd multi sensus, primò grati, cessent delectare, si fuerint repetiti sæpiùs, quamvis fuerint semper ejusdem naturæ et vehementiæ, (in tanto) quantum attinet (ad) ipsam impressionem; et multi (sensus) primo ingrati desinant displicere, et tandem placeant, quamvis neque natura neque vehe-

kind of sensation is either pleasant or unpleasant, without any change in its nature, according to its force; for there is no sensation so agreeable, but that, if immoderately extended, it may become unpleasant, and sometimes nearly intolerable; on the other hand, those sensations which are troublesome by their nature, and applied with their usual force, if rendered milder, often become supportable, and occasionally very agreeable.

157. There is nearly the same reason why many sensations, which were at first agreeable, cease to be so if often repeated, although they are always of the same nature and force, as far as the impression is concerned; and many sensations, unpleasant at first, please at length, although neither

nis vel minimum mutatæ fuerint. Scilicet, sola consuetudine familiares facti, sensus sæpe repetiti, segnius percipiuntur (140), et tandem negliguntur penitus, nulla animi attentione adhibita.

158. Hinc quoque ratio reddi potest, cur novi sensus fere magis placeant; cur varietas adeo jucunda; cur validiores sensus, vel saltem impressiones in organa sensus cujuslibet, cupiamus, ut voluptatem vel augeamus vel continuemus; cur ad tot voluptates vix ac ne vix quidem attendamus, neque fere tales ante extitisse sciamus quam eas amiserimus; cur tot voluptates, tamque constantes et puræ, tantaque ideo et tam continua animi hilaritas, pueris præ senibus.

mentia impressionis vel minimum fuerint mutatæ. Scilicet, sensus sæpe repetiti, facti familiares solâ consuetudine, percipiuntur segniùs (140), *et tandem penitùs negliguntur, nullâ attentione animi adhibitâ.*

158. *Hinc quoque ratio potest reddi, cur novi sensus ferè placeant magis; cur varietas (est) adeò jucunda; cur cupiamus sensus validiores, vel saltem impressiones in organa cujuslibet sensus, ut vel augeamus, aut continuemus voluptatem; cur vix ac ne quidem vix attendamus ad tot voluptates, neque ferè sciamus tales extitisse, antequam amiserimus eas; cur (sunt) tot voluptates, que tam constantes et puræ, que ideo tanta et tam continua hila-*

the nature nor force of the impression be in any degree changed: that is to say, sensations often repeated, and having become familiar by habit alone, are perceived less forcibly, and at length are quite neglected, from no attention of the mind being applied.

158. Hence likewise is a reason why new sensations are generally more pleasant; why variety is so charming; why we desire stronger sensations, or impressions, upon the organs of each sense, in order that we may increase or continue our satisfaction; why we scarcely and not at all attend to many pleasures, nor are conscious that they existed before we have lost them; why there are such numerous pleasures, so constant and pure, and consequently such constant

Quantum enim cunque voluptatis, nova sentiendi facultate subito donatus, aut cæcus visui denuo redditus, haberet, tantum, omnes, ab omnibus sensibus olim habuimus, quamvis longus usus et consuetudo istam voluptatem jam pene deleverint.

ritas animi, pueris præ senibus. Enim quantum cunque voluptatis homo haberet subito donatus novâ facultate sentiendi, aut cæcus denuò redditus visui, tantum (voluptatis), omnes olim habuimus ab omnibus sensibus, quamvis longus usus et consuetudo jam pene deleverint istam voluptatem.

159. Sensus plerique satis validi ut facile et accurate distinguantur, suo quisque genere et modo fere placent maxime. Varia autem existunt voluptatum genera; variique igitur sensus variis modis animum delectare possunt. Neque profecto aut splendor solis, aut pulchra et vivida totius Naturæ facies meridiana, sola hominum oculos, neque magni concentus soli aures eorum delectant; scilicet

159. *Plerique sensus, satis validi ut distinguantur facilè et accurate, quisque suo genere et modo, ferè placent maximê. Autem varia genera voluptatum existunt; que igitur varii sensus possunt delectare animum, variis modis. Neque profectò aut splendor solis, aut pulchra et vivida facies totius Natura, sola delectant oculos hominum, neque magni concentus soli, (delectant) aures eorum, scilicet qui,*

cheerfulness in boys more than in old men. For whatever degree of pleasure a person might derive, who is suddenly endowed with some new sentient faculty, or a blind man again restored to sight, we have all formerly derived as much pleasure from all the senses, although long use and custom have now almost obliterated that pleasure.

159. Most of the sensations, which are sufficiently powerful to be distinguished with ease and accuracy, each in its peculiar manner, please the most; but there are various modifications of pleasures; and, therefore, different sensations delight the mind in different ways. For neither does the splendor of the sun, nor the fair and glowing face of

qui longe diversa, sed tamen haud exigua voluptate, obscura Numinis templa spectant, et umbrosos lucos per lunam adeunt, noctisque demum nigram formidinem lubentes contemplantur; et zephyrum sylvas agitantem, aut apum susurrum, aut fluminis murmur, auscultant. Quin et tempus est, quo tenebræ, silentium, omnisque demum sensus absentia, sola placent.

160. Sui igitur sunt, et quidem satis arcti, limites voluptatibus sensuum; quippe quæ neque multum augeri, neque nimis sæpe repeti, neque diu produci aut continuari possint: quasi ipsa Natura hoc modo

voluptate longe diversâ, sed tamen haud exiguâ, spectant obscura templa Numinis, et adeunt umbrosos lucos per lunam, que demum lubentes contemplantur nigram formidinem noctis; et auscultant zephyrum agitantem sylvas, aut susurrum apum,[33] *aut murmur fluminis. Quin est et tempus, quo tenebræ, silentium, que demum omnis absentia sensûs, sola placent.*

160. *Igitur sunt sui limites, et quidem satis arcti, voluptatibus sensuum; quippe quæ possint neque multum augeri, neque nimis sæpe repeti, neque diù produci aut continuari: quasi ipsa Natura modo moneret, ho-*

all nature alone delight the eyes of men, nor do great concerts alone please the ears of those who, with a very different, but not inconsiderable degree of pleasure, review the obscure temple of the deity, and enter the shady groves by moonlight, and from inclination contemplate the dark horrors of night, and listen to the zephyr shaking the woods, or the hum of the bees, or the murmur of the stream. Moreover there is a time when darkness, silence, and the loss of every sense, alone give delight.

160. Therefore limits, and those rather narrow, are assigned to the pleasures of sensation; for they cannot be much increased, nor too often repeated, nor long called

33. *Apum* is the genitive plural of *apis*, a bee; in some Latin authors it is found *apium*.

moneret, non solis voluptatibus, saltem non hujusmodi voluptatibus, hominem esse natum: omnes enim nimis cultas languor aut fastidium abrumpunt; nonnullas insignis molestia aut dolor tandem excipiunt. Et profecto, ut voluptas in molestiam aut dolorem tam facile transit, sic, pari fere ratione, doloris, saltem magni, cessatio subita, incredibilis aliquando voluptas est, qualis nimirum, si minore aut alio quovis pretio emendi facultas esset, certe non deessent emptores. Voluptas et dolor, ut pulchra Socratis fabula docet, sorores fuerunt, utcunque dissimiles, diversamque sortem expertæ; altera nimirum optata et grata omnibus, altera pariter invisa;

minem non esse natum voluptatibus solis, saltem non voluptatibus hujusmodi: enim languor aut fastidium abrumpunt (voluptates) nimis cultas; insignis molestia aut dolor tandem excipiunt nonnullas. Et profectò, ut voluptas transit tam facile, in molestiam aut dolorem, sic, ferè pari ratione, cessatio subita doloris, saltem magni, aliquando est incredibilis voluptas, qualis nimirùm certè emptores non deessent, si esset facultas emendi minore aut quovis alio pretio. Voluptas et dolor fuerunt sorores, ut pulchra fabula Socratis docet, utcunque dissimiles, que expertæ diversam sortem: nimirum altera optata et grata omnibus; altera pariter invisa; quas (so-

forth, or continued; as if Nature, in a manner, admonished that man is not born for pleasures of this description alone; for languor or loathing break off those too much followed; great uneasiness or pain at length cut off others. And, indeed, in the same way as pleasure passes easily into uneasiness or pain, so in the same way sudden cessation of severe pain is sometimes an inconceivable pleasure, in such a degree that purchasers would not be wanting, if this were to be purchased at any price. Pleasure and pain were sisters, as the beautiful fable of Socrates informs us, however dissimilar, and experiencing diversity of lot: for the one is longed for and acceptable to all, the other is equally detested: Jupiter has so associated and united them in an

quas tamen Jupiter ita sociavit, et tam indissolubili vinculo conjunxit, ut quamvis natura contrarias, et diverse spectantes, quicunque alterutram amplectitur, alteram trahat simul.

161. Magna autem hac de re inter varias sentiendi facultates, variasque quas dant voluptates, differentia observatur. Quædam brevi fatiscunt, neque res quas debent, distinguunt bene, neque amplius delectantur rebus ipsis quas satis distinguunt, et quæ primo gratissimæ fuerant: aliæ diutius ad sua munera valent, et magis diuturnâ fruuntur voluptate. Sic olfactus et gustus fere brevi satiantur; auditus tardius; visus omnium externorum sensuum longe tardissime. Volup-

rores) Jupiter sociavit ita, et conjunxit vinculo tam indissolubili, ut quamvis contrarias naturâ, et spectantes diversè, quicunque amplectitur alterutram, simul trahat alteram.

161. *Autem magna differentia observatur de hâc re, inter varias facultates sentiendi, que varias voluptates quas dant. Quædam (facultates) fatiscunt brevi, neque bene distinguunt res, quas debent, neque amplius delectantur rebus ipsis, quas satis distinguunt, et quæ fuerant primò gratissimæ; aliæ (facultates) valent diutiùs ad sua munera, et fruuntur magis diuturnâ voluptate. Sic olfactus et gustus ferè satiantur brevi; auditus (satiatur) tardiùs; visus (satiatur) longè tar-*

indissoluble bond, that, although opposite in their nature, and looking in opposite ways, whoever embraces the one must take the other with him.

161. Great difference is observed in this respect, between the various faculties of sensation and the different pleasures produced by them. Some of them are quickly fatigued, nor distinguish properly the things that they ought, nor are longer pleased with the objects themselves, which are distinguished and which were at first very agreeable: others are longer competent to their functions, and enjoy a longer source of pleasure. Thus, generally, smell and taste are quickly satiated, but hearing more slowly, and sight slowest of all the external senses. The pleasures which are derived

tates autem quæ a sola mente seu sensibus internis derivantur, sunt omnium maxime longævæ. Omnes demum voluptates, eas variando, aliasque cum aliis miscendo, vel sæpe minus gratas res iis quæ magis delectant interponendo, ita ut ne quid nimis sit, haud parum producere possumus.

162. Supersunt et aliæ quædam res, a jam memoratis plane diversæ, quæ nonnullas sensuum voluptates multum regunt; variæ nimirum conditiones vel universi corporis, præsertim nervorum, vel quorundam præ aliis organorum aut functionum, quibus functionibus, organa quædam sensus, fortasse et sensus ipsi, magna ex parte, in-

dissimè omnium sensuum externorum. Autem voluptates quæ derivantur a mente solâ, seu sensibus internis, sunt longævæ maximè omnium. Demum possumus producere haud parum omnes voluptates, variando eas, que miscendo alias cum aliis, vel sæpe interponendo res minùs gratas iis quæ magis delectant, ut ne sit quid nimis.

162. *Et quædam aliæ res supersunt, planè diversæ a (rebus) jam memoratis, quæ multum regunt nonnullas voluptates sensuum; nimirum variæ conditiones universi corporis, præsertim nervorum, vel quorundam organorum aut functionum præ aliis, quibus functionibus, quædam organa sensûs, et fortasse ipsi sensus, ex magnâ parte inserviunt. Et*

from the mind alone, or internal sensations, are much more permanent. Lastly, we may protract considerably all our pleasures, by varying them, and blending them together, or by interposing things less pleasant with those which are most so, that there may be no excess of either.

162. There are other circumstances remaining, quite different from those already mentioned, which influence considerably the pleasures of the senses: they are the different states of the system generally, particularly of the nerves, or certain organs or functions compared with others, to which some organs of sensations, and perhaps the sensations themselves, are in great part subservient. This is one

serviunt. Et hæc inter alias causas est, quod multæ, et quæ maxime coluntur, voluptates, immortales esse nequeant. Sitienti pura aqua pro nectare est; esurienti omnis cibus gratissimus, etiam cibi odor jucundus: æstuanti aut febricitanti frigus, frigenti calor, placet. Iisdem vero hominibus, aliis temporibus, eædem res non modo non gratæ sunt, sed sæpe valde ingratæ, veluti cibus aut potio, utcunque delicatus, statim post pastum aut potum; vel odor cibi statim post prandium: neque profecto aut epulæ perpetuæ, aut alterum prandium statim a primo, perditissimum possunt delectare helluonem: neque Venus ipsa,

hæc est (causa) inter alias causas, quod multæ voluptates, et (illæ) quæ maximè coluntur, nequeant, esse immortales. Aqua pura est pro nectare (homini) sitienti; omnis cibus (est) gratissimus, (et) etiam odor (est) jucundus esurienti; frigus placet æstuanti aut febricitanti, calor (placet) frigenti. Verò eædem res non modo non sunt gratæ, sed sæpè valdè ingratæ iisdem hominibus, aliis temporibus, veluti cibus aut potio, ut cunque delicatus, statim post pastum aut potum; vel odor cibi statim post prandium: neque profectò aut perpetuæ epulæ, aut alterum prandium statim a primo (prandio) possunt delectare perditissimum helluonem: neque ipsa Venus semper placet

amongst other causes, why many pleasures, and those too much cultivated, cannot be permanent. Plain water is like nectar to the thirsty man; every kind of food is most acceptable, and even its odour is grateful, to the hungry man; cold is pleasant to him, who is over-heated and feverish, but heat is agreeable to him suffering from cold. But the same things are not only not pleasant, but often very unpleasant to the same men, at different times; as food or drink, however delicate, immediately after eating or drinking, or the smell of food, directly after dinner; nor indeed can a series of feasts, or a second dinner, directly after the first, be acceptable to the most desperate gormandizer;

strenuissimis etiam cultoribus, semper placet.

163. Quin et ab aliis sensibus præter illos qui ab impressione externa (133, 144) fiunt, voluptas aut molestia oriri possunt:—ab actione musculorum, quatenus, hæc fortis, facilis, alacris, fuerit, neque ad fatigationem continuata, voluptas percipitur; contrarii vero ab actione musculorum sensus, hebetudinis nempe, lassitudinis, difficultatis, debilitatis, semper molesti sunt: varii demum animi status, affectus, exercitationes variæ memoriæ, imaginationis, judicii, pari fere ratione, nunc grati nunc molesti reperiuntur.

164. Ex his omnibus, ut videtur, concludere æquum sit, tanta benignitate et li-

etiam strenuissimis cultoribus.

163. *Quin voluptas aut molestia possunt oriri ab aliis sensibus præter illos, qui fiunt ab externâ impressione* (133, 144):—*voluptas percipitur ab actione musculorum, quatenus hæc (actio) fuerit fortis, facilis, alacris, neque continuata ad fatigationem; verò contrarii sensus ab actione musculorum, nempe (sensus) hebetudinis, lassitudinis, difficultatis, debilitatis, semper sunt molesti: demum varii status animi, affectus, variæ exercitationes memoriæ, imaginationis, judicii, ferè pari ratione, reperiuntur nunc grati nunc molesti.*

164. *Sit æquum concludere ex his omnibus, ut videtur, Naturam providisse*

nor does Venus herself always attract her most strenuous votaries.

163. Moreover pleasure or pain may arise from other sensations, besides those produced by an external impression (133, 144). Pleasure is derived from the action of the muscles, inasmuch as it is powerful, vigorous, not continued to fatigue; but the contrary sensations, from the action of the muscles, namely, of dullness, lassitude, difficulty, and debility, are always troublesome; lastly, different states of mind, affections, different degrees of exercise, as of memory, imagination, and judgment, are commonly for the same reason, at one time agreeable, at another painful.

164. We may conclude from all these circumstances, as

beralitate hominibus providisse Naturam, totque iis voluptates suppeditasse, ut non modo viverent, sed vita quam dedit fruerentur.

165. Neque sane suis et eximiis usibus carent sensuum voluptates. Suavitas illa generalis quæ omnes fere sensus, præsertim prima ætate, comitatur, invitat nos ad varias sentiendi facultates probe exercendas, et sic acuendas, plurimamque simul et utilissimam scientiam (131, 132) nobismet quotidie acquirendam.

166. Pari fere ratione ad sua organa motus modice et crebro exercenda invitantur homines, præsertim pueri, quorum sic vis insita promovetur, et facilis et promptus usus discitur.

hominibus, tantâ benignitate et liberalitate, que suppeditasse tot voluptates iis, ut non modo viverent, sed fruerentur vitâ, quam (illa dedit.)

165. *Neque sane voluptates sensuum carent suis et eximiis usibus. Illa generalis suavitas, quæ comitatur ferè omnes sensus, præsertim primâ ætate, invitat nos ad probè exercendas varias facultates sentiendi, et sic acuendas, que simul acquirendam nobismet quotidie plurimam et utilissimam scientiam* (131, 132.)

166. *Ferè pari ratione homines præsertim pueri invitantur ad exercenda modicè et crebrò sua organa motûs, quorum sic vis insita promovetur, et usus facilis et promptus discitur.*

it appears, that Nature has provided for man with such kindness and liberality, and has supplied him with such an abundance of pleasures, that he might not only live, but enjoy the life which she gave him.

165. The pleasures of the senses are not without their important uses. That general satisfaction, which generally attends all our sensations, particularly in early age, invites us properly to exercise the various faculties of sensation, and thus to sharpen them, and at the same time to acquire daily for ourselves much and most useful knowledge.

166. In the same way, men, and boys in particular, are invited to exercise moderately and frequently, their organs of motion, the innate power of which is thus promoted, and easy and free use is acquired.

167. Quin et ad quasdam et maximi momenti actiones, qualibus nimirum aut singuli homines conservantur, aut genus humanum propagatur, egregiæ voluptatis præmio invitamur.

167. *Quin invitamur præmio egregiæ voluptatis, et ad quasdam actiones et maximi momenti, (talibus) quabus nimirum singuli homines conservantur, aut humanum genus propagatur.*

168. Postremo, voluptate illa quæ a modica mentis exercitatione oritur, ad nobilissimas ejus facultates exercendas et excolendas inducimur; quæ neglectæ et otiosæ, exiguæ sunt, probe cultæ, pene divinæ fiunt.

168. *Postremò, inducimur, illâ voluptate quæ oritur a modicâ exercitatione mentis, ad exercendas et excolendas nobilissimas facultates ejus, (i. e. mentis): quæ sunt exiguæ, cùm neglectæ et otiosæ, fiunt pene divinæ, cum probè cultæ.*

169. Singuli demum quibus instruimur sensus, tum externi tum interni, variis obnoxii sunt vitiis; unusquisque scilicet, præsertim externorum, potest esse vel

169. *Demum singuli sensus quibus instruimur, tum externi tum interni, sunt obnoxii variis morbis; scilicet, unusquisque (sensuum), præsertim externorum, po-*

167. We are invited by a recompense of extreme pleasure to certain actions of the greatest importance, by such as individuals are preserved, and the human race is propagated.

168. Lastly, we are induced by the pleasure which arises from moderate exercise of the mind, to exercise and cultivate its most noble faculties; they are slight, indeed, when neglected and unemployed, but become nearly divine, if properly cultivated.

169. The senses with which we are supplied, both external and internal, are exposed to various diseases; for, each and particularly the external ones, may be either too

nimis acutus, vel nimis obtusus, vel abolitus, vel denique depravatus. — Huc fortasse referri quoque possunt multi sensus molesti, qui, sive ipsi primarii morbi, sive tantum aliorum morborum signa sint, medici, attentionem optimo jure sibi vindicant (34).

test esse vel nimis acutus, vel nimis obtusus, vel abolitus, vel denique depravatus. — Fortasse huc quoque multi molesti sensus possunt referri, qui, sive sint morbi primarii, sive (sint) tantùm signa aliorum morborum, optimo jure vindicant sibi attentionem medici(34).

acute, or too obtuse, or destroyed, or lastly, depraved. Perhaps several painful sensations may be referred here, and whether they be primary diseases or only symptoms of diseases, claim to themselves the attention of the medical man.

Cap. V.—*De tactu ejusque vitiis ; nec non de dolore, anxietate et pruritu.*

170. Omnium sensuum externorum tactus simplicissimus est, et maxime generalis; quippe qui toti *generi nervoso* communis sit: sed certis partibus acutior, veluti cuti, et imprimis apicibus digitorum. Hi papillas nervosas habere dicuntur, quæ, influente sanguine, quodammodo in tactu erigantur, sensum accuratiorem daturæ; sed potius conjectura a linguæ fabricâ derivata, quæ non gustus modo, sed tactus quoque delicatissimum organum est,

Cap. V.—*De tactû que (de) vitiis ejus ; nec non de dolore, (de) anxietate et pruritû.*

170. Tactus *est simplicissimus et maximè generalis omnium externorum sensus; quippe qui sit communis toti nervoso generi; sed (est) acutior certis partibus, veluti cuti, et imprimis apicibus digitorum. Hi (digiti) dicuntur habere nervosas papillas, quæ, sanguine influente erigantur quodammodo in tactû, daturæ sensum accuratiorem: sed hæc opinio nititur potiùs conjecturâ derivatâ a fabricâ linguæ, quæ est non modo organum gustûs, sed etiam*

Chap. V. *On the sense of touch and its disorders; also on pain, anxiety, and itching.*

170. Touch is the simplest and most general of all the external senses; for it is common to the whole nervous system; but is more acute in certain parts, as in the skin, and particularly in the points of the fingers. These are said to have nervous papillæ, which are erected in some way during touch, by blood flowing into them, so that they may render the sensation more accurate; but this opinion is rather based on conjecture, derived from the structure of the tongue, which is not only an organ of taste, but also a very

hæc opinio nititur, quam certis rei ipsius observationibus.

171. Varias corporum qualitates tactus percipit; duritiem, mollitiem, asperitatem, lævitatem, calorem, frigus, molem, figuram, distantiam, pressuram, pondus; raro fallax vel depravatus; quia scilicet corpora, quorum qualitates sunt explorandæ, proxime ad ipsum organum admoventur, nullo interposito medio, cujus varietates sensum fallere vel corrumpere possint.

172. Quod ad vitia tactus pertinet, nimis acutus in universum rarissimis si ullis in exemplis observatus est. Parti singulari vero acutior justo sæpe sit, vel a cuticula nimis tenui, aut

delicatissimum organum tactûs, quam certis observationibus ipsius rei.

171. *Tactus percipit varias qualitates corporum; (scilicet), duritiem, mollitiem, asperitatem, lævitatem, calorem, frigus, molem, figuram, distantiam, pressuram, pondus: (est) rarò fallax vel depravatus; scilicet quia, corpora, qualitates quorum sunt explorandæ, admoventur proximè ad ipsum organum, nullo medio interposito, varietates cujus (medii) possint fallere vel corrumpere sensum.*

172. *(De eo) quod pertinet ad vitia tactûs, (ille i. e. tactus), observatus est in universum nimis acutus in rarissimis si (in) ullis exemplis. Verò (tactus) fit sæpe acutior justo parti*

delicate organ of touch, than on any certain observations of the fact itself.

171. Touch teaches us to perceive various qualities of bodies, such as hardness, softness, roughness, smoothness, heat, cold, size, figure, distance, pressure, and weight; it is rarely fallacious or depraved; because, bodies, the qualities of which are to be examined, are closely applied to the organ itself, without the intervention of any medium, the varieties of which might mislead or corrupt the sensation.

172. As to the disorders of touch, it is observed to be too acute in the body generally, in very rare, if in any instances; but it is often too acute in some single part, either from the cuticle being too thin, or soft, or raised, or

molli, aut sublata, vel parte ipsa inflammata, vel nimio calori exposita.

singulari, vel a cuticulá nimis tenui, aut molli, aut sublatâ, vel parte ipsâ inflammatâ, vel expositâ nimio calori.

173. Nimis obtusus fit, aut plane aboletur in universo corpore, vel in magna ejus parte, a variis vitiis cerebri nervorumque, compressione, vulnere, vis vitalis defectu: hoc *Anæsthesia* vocatur, paralyseos aliquando comes; et nonnunquam in altero latere observatum sine paralysi, dum alterum, sensu integro, paralyticum factum esset.

173. *Tactus fit nimis obtusus, aut aboletur planè in universo corpore, vel in magnâ parte ejus, a variis vitiis cerebri, que nervorum, compressione, vulnere, ac defectû vis vitalis: hoc vocatur Anæsthesia aliquando comes paralyseos: et nonnunquam observatum (est) in altero latere sine paralysi, dum alterum (latus) factum est paralyticum, sensû integro.*

174. Deficit in parte singulari, vel a vitio ejus nervi, compressione, obstructione, vulnere, &c. vel parte ipsa nimio frigori exposita; vel demum, cuticula quæ tegit

174. *(Tactus) deficit in parte singulari, vel a vitio nervi ejus, (scilicet) compressione, obstructione, vulnere, &c. vel parte ipsâ expositâ nimio frigori: vel*

from the part itself being inflamed, or exposed to too much heat.

173. Touch is rendered more obtuse, or is quite destroyed in the body generally, or in great part of it, by different disorders of the brain and nerves, by compression, a wound, or loss of vital power. This is called anæsthesia, sometimes an attendant on paralysis, and sometimes observed on one side without paralysis, whilst the other side is rendered paralytic, with sensation still entire.

174. It is defective in particular parts, from its nerve being disordered, by compression, obstruction, a wound, &c.; from the part being exposed to too much heat; from the covering cuticle being disordered, too thick, or hardened,

vitiata, nimis crassa, aut dura facta, asperorum aut nimis calidorum corporum contrectatione, quod vitrariis, fabrisque ferrariis accidit, vel a subjecta cute elevata, interposito, sanguine, sero, pure; vel ipsa cute macerata, laxata, torpida facta, quod hydropicis nonnunquam accidit; vel demum toto organo corrupto, gangrænâ, ustione, algore, contusione.

175. Rarissime depravatur tactus, nisi forte inter delirium, quum omnes cerebri functiones mirum in modum turbantur.

176. Ut a reliquis sensibus, sic etiam a tactu, voluptas aut dolor oriri possunt. Lævorem, mollitiem, calorem modicum cum vo-

demum, (a) vitiatâ cuticulâ quæ tegit eam, nimis crassâ, aut factâ durâ, (a) contrectatione asperorum aut nimis calidorum corporum, quod accidit fabris vitrariis, que (fabris) ferrariis: vel cute subjectâ elevatâ, sanguine, sero, (vel) pure interposito: vel (ab) ipsâ cute maceratâ, laxatâ, factâ torpidâ, quod accidit nonnunquam hydropicis: vel demum a toto organo corrupto, gangrænâ, ustione, algore, (vel) contusione.

175. *Tactus rarissimè depravatur, nisi forte inter delirium, quum omnes functiones cerebri, turbantur in mirum modum.*

176. *Ut voluptas aut dolor possunt oriri a reliquis sensibus, sic etiam (possunt oriri) a tactu. Solemus contemplari, lævorem, mollitiem,*

as it occurs to glass workers and blacksmiths; from the subjacent skin being raised, by blood, serum, or pus, intervening; from the skin itself being macerated, relaxed, rendered torpid, which sometimes occurs to dropsical patients; or, lastly, from the whole organ being corrupted by gangrene, burning, cold, or contusion.

175. Touch is seldom depraved, except during delirium, when all the functions of the brain are disturbed in a surprising manner.

176. Pleasure and pain may arise in the same way, from the sense of touch, as they arise from the other senses. We

luptate contemplari solemus. Levis quoque pruritus, seu titillatio, quæ pro voluptate habenda est, ad hunc sensum pertinet, quamvis sæpe a causis internis oriatur.

177. Dolorem ad hunc sensum referimus, cæterosque fere sensus molestos, anxietatem, pruritum, &c.; quamvis revera ab omni sensu vehementiore dolor oriri possit.

178. Dolor est sensus ingratus, vehemens, acer, quem ad certam corporis partem referimus; idque minus accurate, si pars interna dolet; sed magis accurate, si corporis superficies afficitur. Neque tamen causa doloris semper in parte dolente hæret. Nascitur a magna vi parti sen-

modicum calorem cum voluptate. Quoque levis pruritus, seu titillatio, quæ habenda est pro voluptate, pertinet ad hunc sensum, quamvis sæpe oriatur a causis internis.

177. *Referimus dolorem ad hunc sensum, que ferè cæteros sensus molestos, (scilicet) anxietatem, pruritum, &c.; quamvis reverà dolor possit oriri ab omni vehementiore sensû.*

178. *Dolor est ingratus vehemens, acer, sensus quem (sensum) referimus ad certam partem corporis; que (facimus) id minus accuratè, si pars interna dolet; sed magis accuratè, si superficies corporis afficitur. Tamen neque causa doloris semper hæret in parte dolente. (Dolor) nascitur a magnâ*

are accustomed to contemplate smoothness, softness, and moderate heat, with pleasure. Also, slight itching or titillation, which may be esteemed a pleasure, appertains to this sensation, although it often arises from internal causes.

177. To this sense we refer pain, and nearly all the troublesome sensations, as anxiety, itching, &c.; although, in truth, pain may arise from every sensation of a more violent description.

178. Pain is an unpleasant, powerful, keen sensation, which we refer to some precise part of the body; and we can do that with less accuracy, if an internal part is in pain, but more accurately, if the surface of the body be affected.

tienti illata, sive intus sive extrinsecus illa vis fuerit. Quicquid igitur pungit, secat, lacerat, distendit, comprimit, contundit, percutit, rodit, urit, vel ullo modo vehementer stimulat aut irritat, dolorem creare potest.

179. Hinc tot morbis frequentissimum, molestissimum comitem se jungit; sæpe ipso morbo intolerabiliorem. Modicus dolor partem affectam, et paulatim totum corpus, excitat, majorem sanguinis et vis nervosæ fluxum ad partem facit, et ad motus necessarios et salubres sæpe stimulat, fidelis, quamvis ingratus monitor. Hinc inter præsidia vitæ nonnunquam numerandus.

180. Vehementior autem

vi illatâ parti sentienti, sive illa vis fuerit intus sive extrinsecus. Igitur quicquid pungit, secat, lacerat, distendit, comprimit, contundit, percutit, rodit, urit, vel stimulat aut irritat vehementer ullo modo, potest creare dolorem.

179. *Hinc (dolor) jungit se, (quam) frequentissimum et molestissimum comitem tot morbis: sæpe intolerabiliorem ipso morbo. Modicus dolor excitat partem affectam, et paulatim totum corpus, facit majorem fluxum sanguinis et vis nervosæ ad partem, et fidelis, quamvis ingratus monitor, sæpe stimulat ad necessarios et salubres motus. Hinc (dolor) est nonnunquam numerandus inter præsidia vitæ.*

180. *Autem vehementior*

The cause of the pain, however, is not always seated in the affected part. Pain arises from great violence applied to a sentient part, whether it come from within or without. Therefore, whatever pricks, cuts, tears, distends, compresses, bruises, strikes, corrodes, burns, or stimulates, or irritates actively in any way, may produce pain.

179. Hence (pain) is such a frequent and troublesome attendant upon diseases. Moderate pain excites the part affected, and by degrees the whole body; it produces a greater afflux of blood and nervous energy to the part; and (like) a faithful, but unpleasant monitor, it stimulates to necessary and healthy motions. Hence it is sometimes to be enumerated amongst the safe-guards of life.

dolor nimiam irritationem fecit, inflammationem, ejusque consequentias, febrem, et omnia mala quæ a nimio humorum motu profluunt; totum genus nervosum convellit, et pervigilium, convulsiones, delirium, debilitatem, animi defectionem inducit.

181. Immanem dolorem neque animus neque corpus diu ferre potest; et profecto certos fines Natura posuit, quos ultra dolorem intendi non permiserit, quin delirium, aut convulsio, aut animi defectio, vel demum ipsa mors miserum supplicio eripiat.

182. Diuturnus dolor, quamvis mitior, sæpe partis affectæ debilitatem, torporem, paralysin et rigiditatem inducit.

dolor facit nimiam irritationem, inflammationem, et consequentia ejus, (facit) febrem, et omnia mala quæ profluunt a nimis motû humorum; convellit totum nervosum genus, et inducit, pervigilium, convulsiones, delirium, debilitatem (et) defectionem animi.

181. *Neque animus neque corpus potest diù ferre immanem dolorem: et profectò Natura posuit certos fines, ultra quos non permiserit dolorem intendi, quin, aut convulsio, aut defectio animi, vel demum ipsa mors eripiat miserum supplicio.*

182. *Diuturnus dolor, quamvis mitior, sæpe inducit debilitatem, torporem, paralysin et rigiditatem affectæ partis.*

180. More violent pain produces too much irritation, inflammation and its consequences, (likewise) fever, and all the evils which arise from excessive motion of the fluids; it agitates the whole nervous system, and induces great watchfulness, convulsions, delirium, debility, and syncope.

181. Neither the mind nor body can long endure intense pain; for Nature indeed has set limits, beyond which she does not allow pain to be extended, without convulsions, or syncope, or, finally, death itself snatching the victim from its sufferings.

182. A long continued pain, although of milder description, often produces debility, torpor, paralysis, and rigidity, of the affected part.

183. Doloris tolerantia pendet multum a vi animi quam æger possidet: et, prout ipse tulerit, mala quæ a dolore nascuntur graviora vel leviora erunt. Nam in hoc, uti in aliis exemplis, leve fit quod bene fertur onus.

184. Dolor, si non nimis vehemens fuerit, neque eum febris aut anxietas comitetur, ad claritatem et acumen ingenii aliquando conferre videtur. Hoc qui podagra laboraverunt se expertos fuisse testantur.

185. A dolore quem sentiunt, homines judicium aliquod ferunt de modo quo causa ejus agit: veluti pungendo, lancinando, lacerando, urendo, &c.; scilicet inter res quas viderint, vel alio modo noverint, et res

183. *Tolerantia doloris multum pendet a vi animi, quam æger possidet: et, prout ipse tulerit, mala, quæ nascuntur a dolore, erunt graviora vel leviora. Nam onus, quod bene fertur, fit leve, in hoc, uti in aliis exemplis.*

184. *Dolor, si non fuerit nimis vehemens, neque febris aut anxietas comitetur eum, aliquando videtur conferre ad claritatem et acumen ingenii. (Nonnulli), qui laboraverunt podagrâ testantur expertos fuisse hoc.*

185. *Homines ferunt aliquod judicium, a dolore quem sentiunt, de modo quo causa ejus agit: veluti pungendo, lancinando, lacerando, urendo, &c.: scilicet fingunt quandam convenientiam et similitudinem inter res,*

183. Tolerance of pain depends much upon the strength of mind possessed by the patient; and according as he bears them, the evils arising from pain will be more severe, or more slight. For the burthen which is borne patiently is light, in this, as in other instances.

184. Pain, if not too violent, nor attended by fever, appears sometimes to contribute to the brightness and acumen of the genius. Some sufferers from gout, bear witness of having experienced this.

185. Men form some judgment, from the pain they feel, of the mode in which it acts; as in pricking, piercing, lacerating, burning, &c.: that is to say, they imagine a certain correspondence or resemblance between things, which they

magis obscuras, convenientiam et similitudinem quandam sibi fingunt.

186. Alius sensus molestus est anxietas, a dolore plane diversa, obtusior, minus accurate ad partem singularem referenda, et sæpe omni dolore intolerabilior. Probe distinguendum est hanc inter anxietatem de qua sensu medico agitur, eamque de qua communi sermone loquimur. Hæc nimirum a mente est, neque a statu corporis pendet; quippe quæ oriatur a metu periculi cujusvis prævisi, vel magni mali impendentis. Illa autem vere corporea est, non secus ac dolor, a certo corporis statu originem ducens. Nihil vero obstat, quo minus utraque simul adsit, vel al-

quas viderint, vel noverint alio modo, et res magis obscuras.

186. *Anxietas est alius molestus sensus, plane diversa a dolore, obtusior, minùs accurate referenda ad singularem partem, et sæpe intolerabilior omni dolore. Probè distinguendum est inter hanc anxietatem de quâ agitur medico sensû, que eam, de quâ loquimur communi sermone. Hæc nimirum est a mente, neque pendet a statû corporis: quippe quæ oriatur a metû cujusvis prævisi periculi, vel magni impendentis mali. Autem illa est verè corporea, non secus ac dolor, ducens originem a certo statû corporis. Vero nihil obstat, quo minus utraque adsit simul, vel altera sit causa*

have seen or known in any other way, and things which are more obscure.

186. Anxiety is another troublesome sensation, quite different from pain; (it is) more obtuse, (and) less accurately to be referred to some individual spot, (and) is often less supportable than pain itself. Distinction is to be drawn between the anxiety, taken in a medical sense, and that understood in common discourse. The latter is connected with the mind, and does not depend upon the state of body; for it arises from the fear of some foreseen calamity, or impending misfortune. The former is truly corporeal, as much as pain, deriving its origin from a particular state of the body. There is nothing which prevents their being

tera alterius causa sit. Revera ingens anxietas corporea metum et animi anxietatem firmissimo pectori incutiet. Et hæc vicissim, si gravis fuerit et diuturna, fractis corporis viribus, imprimis quæ sanguinis cursum efficiunt, alteram inducere poterit.

187. Anxietas, medico sensu, oritur imprimis a causa quacunque sanguinis motum, per cor vasaque magna prope cor pulmonemque, turbante vel impediente. Hinc vitia cordis ejusque vasorum multiplicia, amplificationem, constrictionem, conversionem in os, polypum, palpitationem, *syncopen*, inflammationem, debilitatem, et ideo nonnullos animi affectus, comitatur.

alterius. Reverà ingens corporea anxietas incutiet pectori firmissimo metum et anxietatem animi. Et hæc vicissim, si fuerit gravis et diuturna, viribus corporis fractis, imprimis (illis) quæ efficiunt cursum sanguinis, poterit inducere alteram.

187. Anxietas, medico sensû, oritur imprimis, a quâcunque causâ turbante vel impediente motum sanguinis, per cor, que magna vasa prope cor que pulmonem. Hinc comitatur multiplicia vitia cordis que vasorum ejus, (scilicet) amplificationem, constrictionem, conversionem in os, polypum, palpitationem, syncopen, inflammationem, debilitatem, et ideo nonnullos affectus animi.

co-existent, or the one being the cause of the other: for, indeed, great corporeal anxiety will strike fear and anxiety of mind into the firmest bosom; and this, on the other hand, if it be acute and long continued, and the bodily powers be broken down, especially those which maintain the circulation, will be enabled to bring on the other.

187. Anxiety, taken in a medical sense, arises especially from every cause disturbing or impeding the motion of the blood through the large vessels near the heart and lungs. Hence it accompanies the numerous disorders of the heart and its vessels; such as enlargement, narrowing, ossification, polypus, palpitation, syncope, inflammation, debility, and, consequently, some affections of the mind.

188. Oritur quoque ab omni spirandi difficultate, qualiscunque ejus causa fuerit; impedita nimirum exhalatione mephitis e pulmone, et mutatione ista salutari sanguinis quæ per spiritum fit; et sanguine forsan ipso minus libere per pulmonem transuente. Hujusmodi anxietas profunde in pectora sentitur.

188. *(Anxietas) quoque oritur ab omni difficultate spirandi, qualiscunque fuerit causa ejus: nimirum ab impeditá exhalatione mephitis e pulmone, et (ab) istá salutari mutatione sanguinis, quæ (mutatio) fit per spiritum; et forsan (ab) ipso sanguine transeunte minus libere per pulmonem. Anxietas hujusmodi sentitur profundè in pectore.*

189. Dicitur quoque oriri a difficiliore transitu sanguinis per jecur, cæteraque viscera abdominis.

189. *(Anxietas) quoque dicitur oriri a difficiliore transitu sanguinis per jecur, que (per) cætera viscera abdominis.*

190. Genus quoddam anxietatis *hypochondriacis* familiaris, et molestissimæ, oritur a stomacho et intestinis, vel multo crudi atque corrupti cibi potusque onere gravatis, vel aëre per con-

190. *Quoddam genus anxietatis familiaris et molestissimæ hypochondriacis, oritur a stomacho et intestinis, vel gravatis multo onere crudi atque corrupti cibi que potûs, vel distentis aëre extri-*

188. It also arises from all kinds of difficulty of breathing, whatever may be the cause; namely, from impeded exhalation of mephitic air from the lungs; from that salutary change which takes place in the blood by breathing; and, perhaps, from the blood itself circulating less freely through the lungs. Anxiety of this kind is felt deeply in the chest.

189. Anxiety is also said to arise from a difficult circulation of blood through the liver, and other abdominal viscera.

190. A certain kind of anxiety, common and very troublesome to hyhochondriacs, arises from the stomach and intestines, either being oppressed with a great accumulation of crude and corrupted food and drink; or from being distended

coctionem minus sanam extricato distentis. Tali onere, vel distentione, ventriculus, organum delicatissimum, male afficitur. Nil mirum igitur si sensum ingratum dat; quin et ejus distentio liberum septi transversi descensum impedit, et sic respirationi obest. Hujusmodi anxietas, expulso aëre, multum et subito levari solet, et hoc, et aliis pravæ digestionis signis, facile dignoscitur. In his exemplis, anxietas, ad ventriculum, sed parum accurate, referri solet.

191. Febres quoque omnigenas anxietas sæpe comitatur, nunc gravior nunc levior: tum propter generalem debilitatem, tum propter sanguinem a superficie corporis pulsum, inque

cato per concoctionem minùs sanam. Ventriculus, delicatissimum organum male afficitur tali onere. Igitur est nil mirum, si dat ingratum sensum: quin et distentio ejus impedit liberum descensum transversi septi, et sic obest respirationi. Anxietas hujusmodi solet levari multum et subito, aëre expulso, et facilè dignoscitur ab hoc, et (ab) aliis signis pravæ disgestionis. Anxietas solet referri in his exemplis ad ventriculum, sed parùm accuratè.

191. *Quoque anxietas, nunc gravior nunc levior sæpè comitatur febres omnigenas; tum propter generalem debilitatem, tum propter sanguinem pulsum a superficie, que accumulatum mag-*

with gas, which is extricated in consequence of less healthy digestion: the stomach, which is a most delicate organ, is distressed by such an accumulation or distention. Therefore, it is no wonder if it affords an unpleasant sensation; and besides, its distention impedes the free descent of the diaphragm, and in this way is an obstacle to respiration. Anxiety of this kind is much and suddenly relieved by the expulsion of flatus, and is known by this and other symptoms of bad digestion. Anxiety is usually referred, in these cases, to the stomach, but with little propriety.

191. Greater or less anxiety also frequently accompanies all kinds of fevers; both on account of the general debility, and on account of the blood being driven from the surface,

magnis vasis accumulatum, veluti ingruente febre intermittente; tum quoque propter ventriculum male affectum, et onere cibi crudi aut corrupti gravatum, vel multo potu, imprimis calido, medicato, distentum et nauseantem. Ingravescente febre, æger magis magisque angitur, insigniter, ut testantur medici, mox ante crisin, vel nocte quæ eam præcedit, veluti ante eruptionem super cutem, vel sanguinis profluvium, vel sudorem, vel alvi fluxum, quales febres aliquando solvunt. Angitur quoque æger a repulsa eruptione, vel translatione salutari.

192. Quin et febres, et plerosque morbus pariter

nis venis, veluti ingruente intermittente febre tum quoque propter ventriculum male affectum, et gravatum onere crudi aut corrupti cibi, vel distentum et nauseantem multo potû imprimis calido, (vel) medicato. Febre ingravescente, æger insigniter angitur magis que magis, ut medici testantur, mox ante crisin, vel nocte quæ præcedit eam (crisin), veluti ante eruptionem super cutem, vel profluvium sanguinis, vel sudorem, vel fluxum alvi, quales aliquando solvunt febres. Quoque æger angitur a repulsâ eruptione, vel translatione salutari.

192. Quin anxietas pariter comitatur et febres, et

and being accumulated in the large veins, as in the commencement of intermittent fever; as well as, on account of the stomach being disordered, and oppressed with a load of crude or corrupted food, or distended and nauseated with much drink, especially warm, or medicated. As the fever increases, the patient becomes much more and more anxious; and (as medical men assert), just before a crisis, or during the night which precedes it; for instance, before an eruption on the skin, or a discharge of blood, or sweat, or diarrhœa, which occurrences sometimes carry off fevers. A patient is also rendered anxious by a repelled eruption, or salutary metastasis.

192. Moreover, anxiety equally accompanies fevers and

anxietas comitatur, quum, vita jam deficiente, mors instat, cujus prænuncia est et signum. Fit, nimirum, quum vires vitales, propriis muneribus impares factæ, circuitum sanguinis absolvere nequeunt. Qualis autem sit hæcce anxietas, cætera appropinquantis mortis signa satis superque docent.

193. Porro, inter somnum ab iisdem causis anxietas oriri potest. Hinc dira somnia, quæ somnum sæpe subito et cum terrore rumpunt.

194. Pruritus, sensus scilicet inquietans, cum scalpendi cupiditate sæpe molestissimus est, quamvis voluptati magis quam dolori affinis sit.

plerosque morbos, quum, vitâ deficiente, mors instat, cujus (mortis anxietas) est prænuncia et signum. Nimirum fit, quum vitales vires, factæ impares propriis muneribus, nequeunt absolvere circuitum sanguinis. Cætera signa appropinquantis mortis docent satis superque, qualis sit hæcce anxietas.

193. Porro, anxietas potest oriri inter somnum, ab iisdem causis. Hinc dira somnia, quæ sæpe rumpunt somnum subitò et cum terrore.

194. Pruritus, scilicet sensus inquietans, cum cupiditate scalpendi, est sæpe molestissimus, quamvis sit magis affinis voluptati quam dolori.

most diseases, at the time that life fails, and death is at hand, of which it is a forerunner and indication. For it comes on when the vital powers are rendered incompetent to their proper functions, and are unable to carry on the circulation of the blood. The other symptoms of approaching death show sufficiently, and more than sufficiently, what kind of anxiety this is.

193. Anxiety may arise during sleep, from the same causes. Hence, frightful dreams, which often break the slumbers suddenly, and with terror.

194. Itching, that is, a teazing sensation combining a desire of scratching, is frequently very troublesome, although more allied to pleasure than to pain.

195. Ut dolor a gravi irritatione, tam *mechanica* quam *chemica*, sic pruritus a leviore fit. Titillatio, seu frictio, veluti indusii lanei minus assueto homini, et delicatiore cute prædito, pruritum excitat; et multa acria ex animalibus, aut herbis, aut fossilibus rebus derivata. Sic primus sensus a *cantharidibus* cuti admotis, pruritus est, quamvis idem auctus dolor fiat.

196. Acria quædam in cutem delata, veluti in febribus quas eruptio super cutem comitatur, aut morbo regio, aut demum varii ipsius morbi, scabies, lepra, eundem effectum edunt.

195. *Ut dolor fit a gravi irritatione, tam mechanicâ, tam chemicâ, sic pruritus (fit) a leviore. Titillatio seu frictio, veluti lanei indusii, excitat pruritum homini minus assueto, et prædito delicatiore cute: et multa acria derivata ex animalibus, (ex) herbis, aut (ex) rebus fossilibus. Sic pruritus est primus sensus a cantharidibus admotis cuti, quamvis idem auctus fiat dolor.*

196. *Quædam acria delata in cutem, veluti in febribus, quas (febres) eruptio super cutem comitatur, aut morbo regio, aut demum varii morbi ipsius, (i. e. cutis) scabies (vel) lepra, edunt eundem effectum.*

195. As pain is produced by great irritation, either mechanical or chemical, so itching is produced by irritation of a slighter kind. The tickling or friction, as of a flannel shirt, excites itching in a person unaccustomed to it, and in one who possesses a more delicate skin: likewise many acrid substances obtained from animals, herbs, and fossils, (possess the same properties). Thus itching is the first sensation produced by cantharides, when applied to the skin, although the same when increased becomes pain.

196. Certain acrid substances conveyed to the skin, as in fevers accompanied by an eruption, or in jaundice, or, lastly, different diseases of the skin itself, as itch, or lepra, produce the same effect.

197. Pediculi, vermes, *ascarides* imprimis, vel cutem vel intestina irritantes, molestum pruritum excitant.

198. Species quædem pruritus interni, homines ad multas et necessarias, tam sani quam morbosi corporis, actiones impellit; urinæ et alvi excretionem, tussim, sternutationem, et similia.

197. *Pediculi, vermes, imprimis ascarides, irritantes, vel cutem vel intestina, excitant molestum pruritum.*

198. *Quædam species pruritûs interni impellit homines ad multas et necessarias actiones, tam sani tam morbosi corporis; scilicet, excretionem urinæ et alvi, tussim, sternutationem, et similia.*

197. Lice, worms, and especially ascarides, irritating the skin or intestines, excite troublesome itching.

198. A certain kind of itching urges us to many and necessary actions of the body, both in health and disease; for instance, the excretion of urine and fæces, coughing, sneezing, and the like.

Cap. VI.—*De gustu ejusque usibus, varietatibus et vitiis.*

199. Hujus organum princeps est lingua: eaque quo proprior apici, eo acutiorem; quo proprior gutturi, eo obtusiorem sensum, habet; quamvis revera acria nonnulla, circa apicem vix gustata, prope radicem linguæ, vel in ipso gutture, acerrimum sensum excitent.

200. Lingua insignibus et pulcherrimis papillis nervosis instruitur, quæ proxima gustus sedes videntur esse. Hæ inter gustandum elevantur, et eriguntur, quo acutiorem sensum habeant.

Cap. VI.—*De gustû, de usibus, varietatibus, (de) vitiis ejus.*

199. Lingua *est princeps organum hujus: que ea habet sensum eo acutiorem, quo est proprior apici, (sed) eo (habet sensum) obtusiorem, quo proprior gutturi: quamvis reverà, nonnulla, acria vix gustata circa apicem, excitent acerrimum sensum prope radicem linguæ, vel in ipso gutture.*

200. *Lingua instruitur insignibus et pulcherrimis nervosis papillis, quæ videntur esse proxima sedes gustûs. Hæ elevantur et eriguntur inter gustandum, quo habeant sensum acutiorem.*

Chap. VI. *On taste, its uses, varieties, and disorders.*

199. The tongue is the principal organ of the taste; it has most acute sensibility nearest the tip, and the most obtuse sensibility nearest the throat: however, some acrid substances, which are scarcely tasted at the tip, excite a sharp sensation near the root of the tongue, or in the throat itself.

200. The tongue is supplied with remarkable and very beautiful nervous papillæ, which appear to be the proximate seat of taste; these are elevated and erected during taste, in order that they may have more acute sensibility.

201. Nihil gustare possumus, nisi quod in saliva, quæ fere aqua est, solubile sit, ut fluida forma linguæ admotum involucra ejus pervadat, pulpamque nervosam afficiat. Hinc terræ insolubiles nullius saporis sunt.

202. Neque sat est solubile esse corpus, ut id gustemus. Oportet salis, vel saltem acrimoniæ nonnihil in se habeat, quod nervosam substantiam stimulet. Quicquid igitur quam ipsa saliva minus salsum aut acre est, nullum habet saporem.

203. Saporum varia genera facile distinguuntur, et ideo nomina peculiaria etiam in communi sermone sibimet nacta sunt: veluti sapor acidus, dulcis, ama-

201. *Possumus gustare nihil, nisi quod sit solubile in salivâ, quæ est ferè aqua, ut admotum linguæ formâ fluidâ pervadat involucra ejus, que afficiat nervosam pulpam. Hinc insolubiles terræ sunt nullius saporis.*

202. *Neque est sat corpus esse solubile, ut gustemus id. Oportet, (ut) habeat nonnihil salis, vel saltem acrimoniæ in se, quod stimulet nervosam substantiam. Igitur quicquid est minus salsum aut acre quam ipsa saliva, habet nullum saporem.*

203. *Varia genera saporum facilè distinguuntur, et ideò nacta sunt sibimet nomina peculiaria etiam in communi sermone: veluti, sapor acidus, dulcis, amarus,*

201. We can taste nothing, unless it be soluble in saliva, which is almost water; so that when applied to the tongue in the fluid state, it may pervade its coverings, and affect the nervous pulp. Hence, earths which are insoluble, are devoid of taste.

202. It is not sufficient that a body be soluble, that we may taste it: it is necessary that it contains some saltness, or at least some acrimony within it, which may stimulate the nervous substance. Therefore, whatever has less saltness or acrimony than the saliva itself, has no taste.

203. Different kinds of tastes are easily distinguished, and therefore have obtained appropriate names, even in common discourse; as, acid, sweet, bitter, salt, acrid,

rus, salsus, acer, aromaticus, putridus; hic vero cum odore quoque jungitur. Omnium saporum varii sunt gradus, omnesque varie inter se conjungi possunt.

204. Sapores alii suavissimi et gratissimi sunt; alii ingrati, vixque tolerandi. Mira tamen de hac re hominum diversitas: ita ut quod aliis maximæ voluptati est, alii non sine nausea et horrore respuant.

205. Quin et suavissimos sapores, qui magnam primo voluptatem dederant, homines brevi fastidire solent; dum pessimos et ingratissimos, quales sunt *nicotianæ tabaci*, *ferulæ assæfœditæ*,

salsus, acer, aromaticus, (vel) putridus: vero hic quoque jungitur cum odore. Sunt varii gradus omnium saporum, que omnes possunt jungi variè inter se.

204. *Alii sapores sunt suavissimi et gratissimi: alii (sunt) ingrati, que vix tolerandi. Tamen (est) mira diversitas hominum de hâc re: ita ut quod est maximæ voluptati aliis, alii respuant non sine nauseâ et horrore.*

205. *Quin homines solent brevi (tempore) fastidire et suavissimos sapores, qui primo dederant magnam voluptatem: dum consuetudine (homines) discunt amare et appetere pessimos et ingratissimos (sapores), quales sunt (sapores) nicotianæ*

aromatic, or putrid, tastes: this last is combined with smell. There are different degrees of all the tastes, and they may all be variously combined together.

204. Some tastes are very sweet and agreeable; others are unpleasant and scarcely to be endured. But there is much diversity amongst men in this respect; so much so, that what affords great pleasure to some, others reject with loathing and horror.

205. Moreover, persons are accustomed in a short time to take a dislike to the sweetest tastes, which at first afforded much pleasure; whilst (on the contrary), by habit, persons learn to like and long for the worst and disagreeable tastes; as tobacco, assafœtida and the like.

et similium, consuetudine amare discunt et appetere.

206. Usus gustus præcipuus videtur esse, ad cibum bonum et salubrem invitare, a noxio aut minus idoneo divertere. Plerique et optimi cibi gustui grati sunt. Qui vero gustui incorrupto mali saporis sunt, ii fere nocent. Hujusmodi instinctu, raro fallace, quem olfactus quoque juvat, bruta animalia ad idoneum cibum perducuntur, et a noxio arcentur.

207. Hic vero instinctus, non secus ac reliqui, minus perfectus homini quam belluis datur; quippe qui tali auxilio minus egeat, aliis facultatibus præditus. Ipse vero qui datur instinctus,

tabaci, ferulæ assæfœtidæ et similium.

206. *Præcipuus usus gustûs videtur esse, invitare ad bonum et salubrem cibum, (et) divertere a noxio aut minus idoneo (cibo). Plerique et optimi cibi sunt grati gustui. Vero (cibi) qui sunt mali saporis incorrupto gustui, ii ferè nocent. Bruta animalia perducuntur ad idoneum cibum, et arcentur a noxio, instinctû hujusmodi, raro fallace, quem olfactus quoque juvat.*

207. *Vero hic instinctus, non secus ac reliqui (instinctus) datur minus perfectus homini quam belluis: quippe qui præditus aliis facultatibus, minus egeat tali auxilio. Verò ipse instinctus qui datur, sæpe*

206. The principal use of taste appears to be, to invite to good and wholesome food, and to divert from what is noxious and improper. Most, and the best kinds of food, are pleasant to the taste; but the food which has a bad taste, with the palate unimpaired, is generally injurious. The brute creation are directed to proper food, and are kept from what is noxious, by instinct of this kind, seldom deceptive, and which is also assisted by the smell.

207. This kind of instinct, like the rest, is less perfect in man than in brutes; for he is endowed with other faculties, and has less need of such assistance; and the instinct which is supplied, is generally vitiated by an unnatural mode of life.

vitæ genere parum naturali sæpe corrumpitur.

208. Statuit porro alma rerum Parens, ut actio ad vitam alendam adeo necessaria, et sua natura quodammodo voluntaria, voluptate aliqua non careret. Grato cibi sapore, tanquam præmio, ad cibum sumendum et conficiendum allicimur. Revera ista voluptas pendet multum a statu ventriculi, et a necessitate novi cibi sumendi. Vilissimus enim cibus, et fere insulsus, homini esurienti gratissimus est, saturi vero fastidium crearet. Porro, inter mandendum saliva copiosior affluit, quo accuratior evadat gustus, et cibi sapor gratior. Fluit etiam saliva esurienti ad conspectum, vel etiam

corrumpitur parum naturali genere vitæ.

208. *Porro alma Parens rerum statuit, ut (hæc) actio adeo necessaria ad alendam vitam, et quodammodo voluntaria suâ naturâ, non careret aliquâ voluptate. Allicimur ad sumendum et conficiendum cibum, grato sapore cibi, tanquam præmio. Reverà ista voluptas multum pendet a statû ventriculi, et a necessitate sumendi novi cibi. Enim vilissimus cibus et ferè insulsus, est gratissimus homini esurienti, vero crearet fastidium saturi. Porro, inter mandendum, copiosior saliva fluit, quo gustus evadat accuratior, et sapor cibi gratior. Etiam saliva fluit esurienti ad conspectum, vel*

208. The kind Parent of Nature has ordained, that this action, which is so necessary to support life, and in its nature in some degree voluntary, might not be devoid of some pleasure. We are allured to take and prepare food, by its agreeable taste, as if it were by way of remuneration. Still that pleasure much depends upon the state of the stomach, and the necessity of taking fresh food: for the most common food, and what is almost unsavoury, is most acceptable to a hungry man, but would create disgust in one that is satisfied. Moreover, during mastication, there is a more copious flow of saliva, in order that the taste may be more accurate, and the savour more agreeable. The saliva flows at sight only, in a

ad imaginem aut recordationem grati cibi, quem appetit.

209. Gustus raro nimis acutus observatur, nisi a vitio cuticulæ, quæ linguam tegit. Hæc, si sublata fuerit, aut vulnerata, aut ulceribus, *aphthis*, similibusque malis, obsessa, tum gustu nimis acri facto, sapores non sine dolore percipiuntur; vel aliquando sapor nullus distinguitur, solus dolor sentitur.

110. Deficit, non secus ac tactus, a cerebri variis ipsius nervorumque vitiis. Hujusmodi vero exempla rara sunt. Nonnullis hominibus admodum obtusus datur. Hi quoque parum olfactus habere solent. Deficit sæpissime propter defectum sa-

etiam ad imaginem aut recordationem grati cibi, quem appetit.

209. *Gustus rarò observatur nimis acutas, nisi a vitio cuticulæ, quæ tegit linguam. Si hæc fuerit sublata, aut, vulnerata, aut obsessa ulceribus, aphthis, que similibus malis, tum gustû facto nimis acri, sapores percipiuntur non sine dolore; vel aliquando nullus sapor distinguitur, (et) dolor solus sentitur.*

210. *(Gustus) deficit, non secus ac tactus a variis vitiis cerebri, que nervorum ipsius. Vero exempla hujusmodi sunt rara. (Gustus) datur admodum obtusus nonnullis hominibus. Hi quoque solent habere parum olfactûs. Sæpissime deficit*

hungry man, or (even) at the idea or recollection of the pleasant food, which he longs for.

209. Taste is seldom observed too acute, unless from disorder of the cuticle covering the skin. If this be raised, or wounded, or covered with ulcers, aptha, and similar diseases, the taste becomes too acute, and the savours are perceived with pain; or sometimes taste is not distinguished, and pain alone is felt.

210. Taste, like touch, is defective from various disorders of the brain and its nerves; but instances of this kind are very rare. It is very often obtuse in some men, who likewise possess little smell:—it is most frequently lost on account of

livæ: nam sicca lingua gustare nequit. Hinc in multis morbis obtusus est, febribus imprimis, gravedine, &c. tum ob salivæ, tum quoque ob appetitus defectum, qui in sano homine adeo juvat; vel propter linguam ipsam tenace et fœdo muco obductam.

211. Depravatur sæpe gustus. Scilicet, vel gustamus nihil omnino linguæ admoto; vel, si quid ei admotum fuerit, saporem percipimus a vero et solito alienum. Hoc fit plerumque a vitio salivæ quæ ipsa gustatur. Hoc modo sapor dulcis, salsus, acer, amarus, putridus, rancidus, percipi potest, prout saliva, vel a statu generalis massæ

propter defectum salivæ: nam sicca lingua nequit gustare. Hinc obtusus est in multis morbis, imprimis febribus, gravedine, &c. tum ob defectum salivæ, tum quoque ob (defectum) appetitus, qui adeo juvat in sâno homine: vel propter linguam obductam tenace et fœdo muco.

211. *Sæpe gustus depravatur. Scilicet vel gustamus omnino nihil admoto linguæ: vel siquid admotum fuerit ei, percipimus saporem alienum a vero et solito. Hoc plerumque fit, a vitio salivæ, quæ ipsa (saliva) gustatur. Hoc modo sapor dulcis, salsus, acer, amarus, putridus, rancidus, potest percipi, prout saliva fuerit corrupta, vel a statû gene*

a deficiency of saliva; for a dry tongue is unable to taste.—Hence, it is obtuse in many diseases; particularly in fevers, catarrh, &c., both on account of a want of saliva, as well as on account of loss of appetite, which is so useful in a healthy person; or on account of the tongue being coated with thick and filthy mucus.

211. The taste is often depraved; that is to say, we either taste no substance when applied to the tongue; or if something be applied, we perceive a taste different from what is proper and usual. This generally occurs from disorder of the saliva, which is tasted: in this way, a sweet, salt, acrid, bitter, putrid, or rancid, taste, may be perceived, according as

humorum, vel organorum quæ ipsam secernunt, vel oris ipsius, vel ventriculi, unde vapor et ructus, præsertim si male se habet, ad os surgunt, corrupta fuerit.

212. Verum, præter salivæ vitia, ab aliis causis gustus vitiatur, veluti papillarum nervosarum conditione; cujus vero parum hactenus notum est. Nam gustus nonunquam plane alienatur, quamvis saliva ipsa aliis hominibus nullius saporis sit.

213. Ad linguæ conditionem medici in omnibus morbis, præsertim febribus, multum solent attendere; nec immerito. Nam ex ea judicare possunt de statu ventriculi, de siti, vel po-

ralis massæ humorum, vel organorum quæ secernunt ipsam, vel ipsius oris vel, ventriculi, unde vapor et ructus surgunt ad os, præsertim si habet se male.

212. *Verò præter vitia salivæ, gustus vitiatur ab aliis causis, veluti conditione nervosarum papillarum cujus verò parum est notum hactenus. Nam nonnunquam gustus planè alienatur aliis hominibus, quamvis ipsa saliva sit nullius saporis.*

213. *Medici solent multum nec immeritò attendere ad conditionem linguæ in omnibus morbis, præsertim febribus. Nam possunt judicare ex eâ, de statû ventriculi, de siti vel potius de*

the saliva has been corrupted by the condition of the general mass of the fluids or organs which secrete it, or of the mouth itself, or of the stomach, whence gas and eructations rise to the mouth, particularly if it be disordered.

212. But besides the disorders dependent upon the saliva, the taste is vitiated from other causes: as by the state of the nervous papillæ; but of this fact we hitherto know little: for sometimes the taste is evidently altered in some persons, although the saliva itself possesses no taste.

213. Medical men are accustomed to attend much, and very properly, to the state of the tongue, in all diseases, (and) particularly in fevers: for they are enabled to judge

tius de necessitate potus sumendi, cum æger, propter delirium, stuporem, &c. neque sitim sentit, neque de ea potest conqueri; et demum de natura, et augmento, vel remissione febris, ab inspecta lingua, medici judicium aliquod deducere conantur.

necessitate sumendi potûs, cum æger propter delirium, stuporem, &c. neque sentit sitim, neque potest conqueri de eâ: et demum medici conantur deducere aliquod judicium ab linguâ inspectâ, de naturâ, et augmento, vel (de) remissione febris.

from it, concerning the state of the stomach; of thirst, or rather of the necessity of taking drink, at a time that a patient on account of delirium, stupor, &c., is neither sensible of thirst, nor able to complain of it; and, lastly, medical men are accustomed to form some judgment from inspection of the tongue, of the nature, and increase, or remission, of fever.

Cap. VII.— *De olfactu; ejusque usibus, varietatibus et vitiis: nec non de natura odorum, eorumque effectibus in corpore humano.*

214. Hujus sensus sedes est in membrana illa mollissima, delicatissima, nervorum et vasorum sanguinem vehentium referta, quæ naribus internis, variisque sinibus et antris, quibus iter ex iis est obducitur. Acutior sensus circa medium septum, ossaque spongiosa, quibus membrana crassior, et mollior datur, quam in antris profundioribus, ubi membrana tenuior, minus

Cap. VII.—*De olfactû—que de usibus varietatibus, et de vitiis ejus; necnon de naturâ odorum, que (de) effectibus eorum, in humano corpore.*

214. Sedes *hujus sensûs est in illa mollissimâ et delicatisssimâ membranâ, refertâ nervorum et vasorum vehentium sanguinem, quæ obducitur naribus internis, que variis sinibus, et antris, quibus est iter ex iis (i. e. internis naribus). Sensus (est) acutior circa medium septum, que ossa spongiosa, quibus crassior et mollior membrana datur, quam in profundioribus antris, ubi*

Chap. VII.—*On the sense of smelling, its uses, varieties, and disorders: also on the nature of odours, and their effects on the human body.*

214. The seat of this sense is, in that very soft and delicate membrane, abundantly supplied with nerves and blood-vessels, which is spread over the internal nares, and the various sinuses and cavities which open into them. Smelling[34] is more acute about the central septum and spongy bones, which are supplied with a thicker and softer membrane, than the deeper cavities ; where the membrane is

34. The term *smelling* is applied, in this translation, to the sense, or power of perceiving smells; and *smells*, to the quality of the substance producing the impression called smell, odour, scent, &c. Some writers use the terms synonymously.

nervosa, et vasis minus referta est: quamvis hæ quoque, ut videtur, partes olfactu non omnino careant.

membrana est tenuior, minus nervosa, et minus referta vasis: quamvis hæ partes quoque, non omnino careant olfactû.

115. Ut gustu de partibus corporum solubilibus, sic olfactu de partibus volatilibus, quæ subtilissimæ per aëra volitant, judicamus. Ut accurate olfaciat aliquis, apertis quantum possit naribus, clausoque ore, aëra fortiter inhalat, quo plures particulæ volatiles, majoreque vi, olfactus organo admoveantur.

215. Ut judicamus de partibus solubilibus corporum gustû, sic (judicamus) de partibus volatilibus quæ subtilissimæ volitant per aëra, olfactû. Ut aliquis olfaciat accuratè, inhalat aëra fortiter, naribus apertis quantum possit, que ore clauso, quo plures volatiles particulæ, que majore vi, admoveantur organo olfactûs.

216. Organum quoque olfactus, non secus ac organum gustus, quo acutiorem sensum habeat, madidum servatur; partim proprio muco, partim lachrymis quæ ex oculis assidue destillant.

216. Quoque organum olfactûs, non secus ac organum gustûs, servatur madidum, quo habeat acutiorem sensum; partim proprio muco, partim lachrymis, quæ assiduè destillant ex oculis.

thinner, less supplied with nerves and blood-vessels; although these parts, likewise, are not entirely devoid of the power of smelling.

215. As we judge of the soluble particles of bodies, by the taste, we judge of the volatile subtle particles floating in the air, by smelling. In order to smell accurately, it is necessary to inhale the air forcibly, with the nostrils opened as wide as possible, and with the mouth closed; so that most of the volatile particles may be applied, with greater force, to the organ.

216. The organ of smelling, likewise, like the organ of taste, is kept in a moist state, that it may possess more sensibility; partly by its own mucus, and partly by the tears, which are constantly flowing down from the eyes.

217. Ut gustus cibi itineri, sic olfactus ostio viarum, quas aër subire debet, custos præponitur, moniturus ne quid noxii, via quæ semper patet, in corpus admittatur. Porro, ut gustus, hic quoque sensus ad cibum salutarem invitat, a noxio aut corrupto, putrido imprimis vel rancido, deterret.

218. Quin et odores quidam insigni vi in *genere nervoso* pollent, et mirandos nonnunqam effectus edunt. Alii grate excitant, et animo fere deficientem statim recreant: alii animo linqui faciunt, et aliquando, ut fertur, hominem plane extinguunt. Huc quoque pertinent quæ vocantur antipathiæ, ridiculæ profecto,

217. *Ut gustus præponitur (ut) custos itineri cibi, sic olfactus (præponitur custos) ostio viarum, quas (vias) aër debet subire, moniturus ne quid noxii admittatur in corpus, viâ quæ semper patet. Porro, ut gustus, hic sensus quoque invitat ad salutarem cibum, (et) deterret a (cibo) noxio, aut corrupto, imprimis putrido, aut rancido.*

218. *Quin et quidam odores pollent insigni vi in nervoso genere, et nonnunquam edunt mirandos effectus. Alii (odores) excitant gratè, et statim reficiant (illum) fere deficientem animo: alii (odores) faciunt hominem lingui animo, et aliquando, ut fertur, planè extinguunt (illum). Quoque (illa) quæ vocantur anti-*

217. As taste is appointed as a guardian to the passage of the food, smelling (performs the same duty) to the opening of the air-passages; warning lest any thing noxious be admitted into the body, by that passage, which is always open. Moreover, like taste, it invites us also to wholesome food, and keeps us from that which is hurtful, or corrupted, particularly the putrid and rancid.

218. Some odours possess remarkable influence over the nervous system, and sometimes produce surprising effects: some excite agreeably, and immediately restore a person, when approaching to syncope; others bring on fainting, and sometimes (as it is reported) completely deprive of life: antipathies likewise may be referred to this place, truly

sed sæpe nulla vi animi debellendæ.

219. Olfactus interdum nimis acutus fit, tum propter vitia quædam organi ipsius, quod rarius observatur, tum quoque propter universum *genus nervosum* nimis sentiens; ut in febribus quibusdam, in phrenitide, in *hysteria*, aliquando observatur.

220. Obtunditur sæpius, aut a vitiis cerebri nervorumque, veluti a vi capiti illata, vel a causa interna, provenientibus; aut a vitio ipsius organi, aridi, propter solitos humores suppressos, vel alio versos, vel nimia muci lachrymarumque copia obruti. Utriusque exemplum est in gravedine, ubi initio morbi nares ares-

pathiæ pertinent huc, profectò ridiculæ, sed sæpè debellandæ nullâ vi animi.

219. Interdum olfactus fit nimis acutus, tum propter quædam vitia ipsius organi, quod observatur rariùs, tum quoque propter nimis sentiens universum nervosum genus: ut aliquando observatur in quibusdam febribus, in phrenitude, (et) in hysteriâ.

220. (Olfactus) sæpiùs obtunditur, aut a vitiis cerebri que nervorum, veluti (illis) provenientibus a vi illatâ capiti, vel ab internâ causâ: aut a vitio organi ipsius, aridi propter suppressos solitos humores, vel versos aliò, vel obruti nimiâ copiâ muci que lachrymarum. Est exemplum utriusque in gravedine, ubi initio

ridiculous, but frequently to be subdued by no power or resolution.

219. Smelling becomes sometimes too acute, either on account of disorders of the organ itself, which is seldom observed, or on account of a too sentient nervous system in general, as is observed in certain fevers, in phrenitis, and in hysteria.

220. Smelling more frequently becomes obtuse, either from diseases of the brain and nerves, such as proceed from force applied to the head, or from an internal cause; or from disorder of the organ itself, being dry on account of a suppression of the usual fluids, or their being diverted elsewhere, or overwhelmed with an excess of mucus or tears.

cunt, postea vero vel multo humore inundantur, vel spissiore muco obstruuntur. Sed in his aliisque bene multis exemplis, membrana nasi ipsa afficitur inflammatione, relaxatione, tensione nimia, qua fieri non potest quin nervi, qui magnam ejus partem efficiunt, vitientur. Porro, quicquid liberum aëris in nares introitum, aut ipsius per eas transitum impedit, olfactui non obesse non potest.

morbi nares arescunt, postea vel inundantur multo humore, vel obstruuntur spissiore muco. Sed, in his que in bene multis aliis exemplis, ipsa membrana nasi, afficitur inflammatione, relaxatione, vel nimiâ tensione, qua non potest fieri, quin nervi vitientur, qui efficiunt magnam partem ejus. Porro, quicquid impedit liberum introitum aëris in nares, aut transitum ipsius (aëris) per eas (nares), non potest non obesse olfactui.

221. Depravatur nonnunquam olfactus, et odores percipiuntur, ubi nihil odorati fuit, vel odores rerum percipiuntur a veris et solitis alieni. Particulæ odoratæ, post longam in antris moram, demum erumpentes,

221. *Nonnunquam olfactus depravatur, et odores percipiuntur, ubi fuit nihil odorati, vel odores rerum, alieni a veris et solitis (odoribus) percipiuntur. Odoratæ particulæ, post longam moram in antris, demum*

There is an instance of both disorders in catarrh, when the nostrils are dry in the beginning of the disease, and are afterwards inundated with fluid, or obstructed with a thicker mucus than natural. In this, as in many other cases, the membrane itself is attacked by inflammation, relaxation, or excessive tension; hence, as a necessary consequence, the nerves are disordered, which form a considerable portion of it. Besides, whatever impedes the free entrance of air into the nostrils, or its egress through them, cannot fail to be an obstacle to smelling.

221. Smelling is sometimes depraved, and odours are perceived, when there is no odorous body; or odours of things unlike the real and true ones, are perceived. Odorous particles after long detention in the cavities, emerging at length,

et organum denuo afficientes, hujusmodi depravationem, in sanissimo etiam homine, nonnunquam efficiunt. Multa quoque vitia narium partiumque quibus ad eas iter patet, ulcera, caries, cancer, corruptio quævis oris, dentium, gutturis, pulmonis, prava etiam in ventriculo concoctio, vaporem fœtidum, exhalando, olfactum corrumpere possunt. Depravatur interdum fortasse a vitiis cerebri nervorumque, quorum ratio magis obscura est.

erumpentes, et denuò afficientes organum, nonnunquam efficiunt depravationem hujusmodi, etiam in sanissimo homine. Quoque multa vitia narium, que partium quibus iter patet ad eas, scilicet, ulcera, caries, cancer, quævis corruptio oris, dentium, gutturis, pulmonis, etiam prava concoctio in ventriculo, exhalando fœtidum vaporem, possunt corrumpere olfactum. Fortasse interdum depravatur, a vitiis cerebri, que nervorum, ratio quorum est magis obscura.

and again affecting the organ, sometimes produce depravation of this kind, in a perfectly healthy man. Likewise many diseases of the nostrils and of the parts opening into them; such as ulcers, caries, cancer, any corruption of the mouth, teeth, throat, or lungs; also bad digestion in the stomach, by exhaling a fetid vapour, may vitiate the sense of smelling. It is possibly sometimes disordered by diseases of the brain and nerves; the reason of which is more obscure.

Cap. VIII.—*De auditu, sonis, et vitiis auditus.*

222. Hic sensus excitatur tremoribus aëris, quos corpora sonantia faciunt. Hos auris externa, cartilaginosa, et meatus auris uterque, colligunt, ad tympanum deferunt, et simul intendunt, quo majore vi membranam tympani feriant. Hæc membrana, ipsa commota et tremens, malleum sibi annexum commovet, et junctam sibi incudem ferire facit; juvantibus simul propriis mallei musculis. Incus vero suum motum ossi *orbiculari* et *stapedi* impertit, qui iterum, tum hoc motu, tum quoque

Cap. VIII.—*De auditû, (de) sonis, et (de) vitiis auditûs.*

222. Hic *sensus excitatur tremoribus aëris, quos (tremores) corpora sonantia faciunt. Cartilaginosa externa auris, et uterque meatus auris colligunt hos (tremores), deferunt (illos) ad tympanum, et simul intendunt, quo feriant membranam tympani majore vi. Hæc ipsa membrana commota et tremens, commovet malleum annexum sibi, et facit ferire incudem junctam sibi: propriis musculis mallei simul juvantibus. Verò incus impertit suum motum ossi orbiculari et stapedi, qui iterum trahitur, tum*

Chap. VIII.—*On hearing, on sounds, and the disorders of hearing.*

222. The sense of hearing is excited by the tremors of the air, occasioned by sonorous bodies. The cartilaginous external ear, and both auditory passages, collect these tremors, and carry them to the tympanum, and at the same time give them intensity, that they may strike the membrane of the tympanum with greater impetus. This membrane agitated and tremulous, moves the malleus annexed to it, and makes it strike the incus, which is articulated with it; the proper muscles of the malleus at the same time assisting. The

actione sui musculi, ita trahitur, ut pars posterior ejus baseos in fenestram *ovalem*, ipsumque vestibulum, impellatur. Porro, tremores membranæ tympani, cum aëre per *tubam Eustachianam* in tympanum delato, simul communicantur; qui demum aër fenestræ rotundæ membranam ferit, qua in labyrinthum, seu aurem intimam, pervenitur. Duplice igitur, ut videtur, modo, tremores ad labyrinthum perveniunt, qui totus, mollissima et admodum sentiente nervosa membrana, obductus, et aquula pellucida, subrubra, ad omnes tremores suscipiendos et propagandos aptissima, plenus, ultimum auditus organum est.

hoc motû, tum quoque actione sui musculi, ita, ut pars posterior baseos ejus impellatur in ovalem fenestram, que (in) vestibulum ipsum. Porro, tremores membranæ tympani, simul communicantur, cum aëre delato per Eustachianam tubam in tympanum; qui aër demùm ferit membranam rotundæ fenestræ, quâ pervenitur in labyrinthum, seu intimam aurem. Igitur tremores perveniunt, duplice modo, ut videtur, ad labyrinthum, qui totus obductus mollissimâ et admodum sentiente nervosâ membranâ, et plenus, aquulâ pellucidâ, subrubrâ, aptissimâ ad suscipiendos, et propagandos omnes tremores, est ultimum organum auditûs.

incus imparts its motion to the orbicularis and stapes, which again is drawn in such a direction, both by this motion, and by the action of its own muscle, that the posterior portion of its base is forced into the fenestra ovalis, and the vestibule itself. Moreover, the tremors of the membrane of the tympanum, communicate at the same time, with the air conveyed by the Eustachian tube to the tympanum, which (air) at last strikes the membrane of the fenestra rotunda, by which it is conveyed to the labyrinth, or internal ear. Therefore tremors, as it appears, arrive in two ways to the labyrinth, which is the ultimate organ of hearing, and is entirely lined with a very soft, sensitive, nervous membrane, and filled with a pellucid, reddish fluid, best adapted to receive and propagate all tremors.

223. Neque sane quicquam certa fide de singularum auris internæ partium actionibus notum est, præterquam ossicula ipsa ad tremores suscipiendos et reddendos vel propagandos aptissima esse, et ideo ad auditum conferre: ita ut per dentes et maxillam, et petrosum os, soni ad ultimam nervosam organi partem perveniant, et sic homo fere surdus, neque per aëra audiens, musica quadammodo fruatur. Potius confitendum est, multum hic subesse obscuri, et actionem et usus multarum partium, quæ in aure sunt, parum adhuc intelligi.

224. Soni sunt fortes vel debiles, graves vel acuti. Soni magnitudo vel claritas pendet a vi seu magnitudine

223. Neque sanè quicquam est notum certá fide, de actionibus singularum partium internæ auris, præterquam ossicula ipsa esse aptissima ad suscipiendos, et reddendos vel propagandos tremores, et ideò conferre ad auditum: ita ut soni perveniant per dentes et maxillam, et petrosum os ad ultimam nervosam partem organi, et sic homo ferè surdus, neque audiens per aëra, quodammodo fruatur musicá. Potius est confitendum, hic multum obscuri subesse, et actionem et usus multarum partium, quæ sunt in aure, adhuc parum intelligi.

224. Soni sunt fortes vel debiles, graves vel acuti. Magnitudo vel claritas soni pendet a vi seu magnitudine

223. There is nothing certain known of the actions of the separate parts of the internal ear, beyond, that, the little bones are best adapted to receiving, and returning or propagating tremors, and on that account contribute to hearing; so that sounds may reach by means of the teeth, maxillary and petrous bone, to the deepest nervous part of the organ; and thus a man who is nearly deaf, and not hearing through the medium of the air, may enjoy music to some extent. We must confess that here there is much obscurity, and that the action and uses of many parts in the ear, are still little understood.

224. Sounds are loud or low, deep or acute:—the extent or clearness of the sound depends upon the force or extent

tremorum, quos corpus sonans aëri impertit; gravitas a numero tremorum qui dato tempore absolvuntur. Sunt tamen certi fines, quos citra et ultra, vel nullus sonus est, vel acerrimus, et auri ingratissimus, vixque tolerabilis.

225. Porro, vis soni intenditur repercussu multorum corporum, quæ tremores a tremente aëre suscipiunt et reddunt. Soni itaque reflexi, quotquot cum primario concordant, una cum eo aures feriunt, eumque fortiorem faciunt: hinc vox sub pleno Jove debilior quam in cubiculo. Quod si, certo post intervallo, reflexi soni ad aures perveniunt, a primario distincti audiuntur, et sic echo fit.

tremorum, quos sonans corpus impertit aëri; gravitas (pendet) a numero tremorum, qui absolvuntur dato tempore. Tamen sunt certi fines, citra et ultra quos, sonus est vel nullus vel acerrimus, et ingratissimus auri, que vix tolerabilis.

225. Porro, vis soni intenditur repercussû multorum corporum, quæ suscipiunt et reddunt tremores, a tremente aëre. Itaque reflexi soni, quotquot concordant cum primario (sono), feriunt aures unà cum eo, que faciunt eum fortiorem: hinc vox est debilior sub pleno Jove, quam in cubiculo. Quod si, reflexi soni perveniunt ad aures, post certo intervallo, audiuntur distincti a primario (sono), et sic echo fit.

of the tremors, which a sounding body imparts to the air; their depth depends upon the number of tremors produced in a given time. Nevertheless, there are certain sounds within and beyond which, sound is lost or very shrill, and most unpleasant to the ear, and scarcely supportable.

225. The strength of a sound is increased by repercussion of many bodies, which receive and return the tremors, from the tremulous air. Therefore, reflected sounds, which agree with the primary one, strike the ears simultaneously, and render it stronger; hence the voice is weaker under the open air than in a room. But if the reflected sounds reach the ear after a certain interval, they are heard distinct from the primary one, and echo is produced.

226. Sonorum immensa varietas est: quippe quorum vel levissimæ mutationes et conjunctiones, ab acuta et docta aure, percipiantur. Insignis quoque eorum vis est in animum hominis, et ideo in corpus. Varios animi affectus, tristes imprimis et lætos, inspirant; multique hominem ex hoc inexhausto fonte puras et suavissimas voluptates hauriunt. Auris vero, quæ vocatur musica, non omnibus datur; cujus rei ratio hactenus latet. Nullo modo pendet ab acutiore vel obtusiore auditu. Semi-surdi nonnunquam musica satis periti sunt et amantissimi, qua bene audientes parum sæpe fruuntur: et vir, auditu integro manente, au-

226. *Est immensa varietas sonorum; quippe quorum, vel levissimæ mutationes et conjunctiones percipiantur ab acutâ et doctâ aure. Quoque vis eorum est insignis, in animum hominis, et ideò in corpus. (Illi soni) inspirant varios affectus animi, imprimis tristes et lætos; que multi hominem hauriunt puras et suavissimas voluptates ex hoc inexhausto fonte. Vero auris, quæ vocatur musica, non datur omnibus: ratio cujus rei adhuc latet. Pendet nullo modo ab acutiore vel obtusiore auditû. Semi-surdi sunt nonnunquam satis periti et amantissimi musicæ, quâ (musicâ illi), bene audientes sæpè parum fruuntur; et vir, integro auditû*

226. There is an immense variety of sounds, the slightest changes and combinations of which may be perceived by an acute and tutored ear. Their influence is remarkable upon the mind of man, and consequently upon the body: they inspire different mental affections, especially those that are sad and cheerful; and many persons derive pure and most sweet pleasures from this inexhaustible source. An ear, which is called musical, is not supplied to all persons; and the reason of this is rather obscure.—It does not depend in any degree upon more acute or obtuse hearing. Persons nearly deaf are sometimes skilful in and very fond of music, which, persons, whose hearing is good, often enjoy in a very slight degree; and a person, with his hearing still perfect, has lost suddenly, without any assignable cause, his musical

rem suam musicam, quam eximiam habebat, subito et sine nota causa amisit. Neque ratio ulla est cur defectum talem inæquali per binas aures auditui imputemus. Facultas ipsa Naturæ donum est, nullo studio acquirenda: cultu vero et usu, non secus ac reliquæ hominis facultates, mirum in modum acuitur et roboratur.

227. Auditus fere omnium sensuum sæpissime vitiatur; quod profecto nil mirum; scilicet, quia organum habet delicatissimum, et ex plurimis et valde minutis partibus compositum.

228. Sæpe acutior justo fit auditus, vel a generali corporis habitu nimis irritabili, qualem fœminæ *hyste-*

manente, amisit subitò et sine notâ causâ, suam musicam aurem, quam habebat eximiam. Neque est ulla ratio cur imputemus talem defectum inæquali auditui per binas aures. Ipsa facultas est donum Naturæ, acquirenda nullo studio: verò acuitur, et roboratur in mirum modum cultû et usû, non secus ac reliquæ facultates hominis.

227. *Auditus vitiatur sæpissimè ferè omnium sensuum; quod profectò (est) nil mirum; scilicet, quia habet organum delicatissimum, et compositum ex plurimis et valde minutis partibus.*

228. *Auditus fit sæpe acutior justo, vel a nimis irritabili generali habitû corporis, qualem hystericæ aut*

ear, which he possessed in an exquisite degree. There is no reason why we should impute such a defect to unequal hearing in the two ears.—It is a faculty given us by Nature, to be acquired by no kind of study; but (which) is rendered acute, and strengthened to a wonderful extent, by cultivation and use, like the other faculties of man.

227. Hearing is the most frequently disordered of all the senses; which is by no means surprising, since it is seated in such a delicate organ, composed of numerous and very minute parts.

228. Hearing becomes more acute than is proper, either from a too irritable general habit of body, such as hysterical

ricæ aut puerperæ sæpe habent; vel a cerebro ipso nimis sentiente, quod in febribus haud raro observatur; tum quoque in phrenitide, et aliquando, licet rarius, in vera insania; vel ab aure ipsa male se habente, et inflammatione, dolore, tensione nimia, affecta.

229. Obtunditur vel plane aboletur hic sensus, ita ut æger vel graviter audiat, vel omnino surdus fiat, similibus fere causis, et gradu tantum seu magnitudine diversis; et imprimis a defectu auriculæ externæ, aut meatu vel altero vel utroque, muco, *cerumine*, pure, rebus externis, obstructo; ejusque concretione, qualis post suppurationem, nonnunquam post *variolam*, observata est; vel propter

puerperæ fœminæ sæpe habent; vel a cerebro ipso nimis sentiente, quod haud raro observatur in febribus; tum quoque in phrenitide, et aliquando, licèt rariùs, in verâ insaniâ; vel ab ipsâ aure male habente se, et affectâ imflammatione, dolore, (et) nimiâ tensione.

229. *Hinc sensus obtunditur vel planè aboletur, ita ut æger vel audiat graviter, vel fiat omnino surdus, fere similibus causis, vel diversis tantùm gradû seu magnitudine; et imprimis, a defectû externæ auriculæ, aut vel altero vel utroque meatû, obstructo, muco, cerumine, pure, (vel) externis rebus; que concretione ejus, qualis est observata post suppurationem, nonnunquam post variolam; vel propter mem-*

or puerperal females possess; or from the brain itself being too sensitive, as is often observed in fevers; likewise in phrenitis, and sometimes, though not so frequently, in real insanity; or from the ear itself being disordered, and affected with inflammation, pain, and too much tension.

229. This sense is rendered obtuse, or is completely destroyed, so that a patient is either hard of hearing, or is quite deaf, from similar causes, or causes differing only in degree or magnitude; (such as) particularly, from a defect of the external ear, or from one of the auditory passages being obstructed by mucus, wax, pus, or extraneous bodies; also by its concretion, such as is observed after suppuration or small-pox; or on account of the membrane of the tym-

membranam tympani rigidam factam, aut relaxatam, aut erosam, aut ruptam; vel tympanum ipsum vel tubam *Eustachianam* aliquo modo obstructam; vel propter ossiculorum, aut membranarum, aut musculorum aliquem labyrinthi ipsius, concretione, *spasmo*, paralysi, torpore, affectum; et denique propter varia cerebri nervorumve vitia, salva omnino ipsius organi fabrica. Hinc sæpe morbus *nervosi generis* surditas, subito invadens et sponte decedens. Hinc quoque senibus familiaris, quibus omnes partes solidæ rigent, omnes nervosæ minus sentiunt.

230. Febre laborantes, illo imprimis febris genere, quod debilitas insignis et

branam tympani factam rigidam, aut relaxatam, aut erosam, aut ruptam; vel (propter) ipsum tympanum vel Eustachianam tubam obstructam aliquo modo; vel propter aliquem ossiculorum, aut membranarum, aut musculorum ipsius labyrinthi, affectum concretione, spasmo, paralysi, (aut) torpore; et denique propter varia vitia cerebri que nervorum, fabricâ organi ipsius omnino salvâ. Hinc surditas (est) sæpe morbus nervosi generis, subito invadens, et decedens sponte. Hinc quoque (surditas est) familiaris senibus, quibus omnes solidæ partes rigent, (et) omnes nervosæ (partes) sentiunt minùs.

230. *(Homines) laborantes febre, imprimis illo genere febris, quod (genus)*

panum being rigid, or relaxed, or eroded, or ruptured; or on account of the tympanum itself, or Eustachian tube, being destroyed in any other manner; or on account of some one of the little bones, or membranes, or muscles of the labyrinth being affected by concretion, spasm, paralysis, or torpor; and, lastly, on account of various disorders of the brain itself and nerves, whilst the structure of the organ itself is perfectly sound. Hence deafness is frequently a disease of the nervous system, suddenly coming on and as speedily departing. Hence also, deafness is common to old persons, in whom all the solid parts are rigid, and all the nervous parts are less sensible.

230. Persons suffering from fevers, particularly that kind

stupor comitari solent, sæpe surdi fiunt: quod forsitan aliquando, cum aliis signis cerebri valde oppressi, viriumque ægri exhaustarum accedens, malum signum erit. Plerumque vero optimi ominis est, quamvis etiam sopor aliquis comitetur. Hujus rei ratio satis obscura; neque alia fortasse, quam quod talis surditas pendeat a statu cerebri morbido certe, sed sua natura vix periculoso; cum acutior justo auditus fit propter aliquid inflammationis cerebro obrepentis, quæ semper valde periculosa est.

insignis debilitas et stupor solent comitari, sæpe fiunt surdi; quod forsitan erit aliquando malum signum, cùm accedens cum aliis signis valdè oppressi cerebri, que exhaustarum virium ægri. Verò plerumque est optimi ominis, quamvis etiam aliquis sopor comitetur. Ratio hujus rei est satis obscura; neque fortasse (est) alia (ratio), quàm quod talis surditas pendeat a statû cerebri certè morbido, sed vix periculoso suâ naturâ; cum auditus (est) acutior justo, fit propter aliquid inflammationis obrepentis cerebro, quæ (inflammatio) est semper valde periculosa.

231. Depravatur sæpe auditus hac potissimum ratione, ut soni, veluti tym-

231. *Sæpe auditus depravatur potissimum hac ratione, ut soni, veluti tym-*

attended by great debility and stupor, often become deaf: this may perhaps be sometimes a bad symptom, when coming on combined with other symptoms of oppression of the brain, and exhausted powers of the patient; but it is generally a good indication, even if attended by a certain degree of drowsiness. The reason of this is quite obscure; nor perhaps can any other be given, than that such deafness depends upon a state of brain, morbid indeed, but still not dangerous in its nature; whereas, hearing, if too acute, takes place on account of some inflammation stealing upon the brain, which is always a very dangerous occcurrence.

231. Hearing is often depraved, particularly in such a way, that sounds like those of a drum, or bell, or of a water-

pani, campanæ, lapsus aquarum, audiantur, cum nullus in aëre tremor est, neque sanus homo quidquam audit. Hoc malum tinnitus aurium vocatur, cujus varia genera observata sunt. Leve plerumque et fugax malum: nonnunquam vero pertinax, diuturnum, molestissimum, diu noctuque vexat.

pani, campanæ, lapsûs aquarum, audiantur, cum nullus tremor est in aëre, neque sanus homo audit quidquam. Hoc malum vocatur, tinnitus aurium, cujus varia genera sunt observata. Plerumque est leve et fugax malum; verò nonnnunquam (est) pertinax, diuturnum, molestissimum, (et) vexat diu que noctu.

232. Tinniunt sæpe aures a levissima causa, meatum ipsum vel tubam *Eustachianam* pro parte obstruente, ita ut imperfectus, interruptus aëri aditus concedatur; quo fit ut hic membranam tympani, vel fortasse partes interiores, inæqualiter, et impetu nimio, feriat. Hinc bombi, tinnitus species,

232. *Sæpe aures tinniunt a levissimâ causâ, pro parte obstruente ipsum meatum vel Eustachianam tubam, ita ut imperfectus, (et) interruptus aditus concedatur aëri; quo fit, ut hic (i. e. aër) feriat inæqualiter et nimio impetû, membranam tympani vel fortasse interiores partes. Hinc bombi, species tinnitûs, audiuntur*

fall are heard, when there is no tremor in the air, and a healthy person hears nothing: this malady is called tinnitus, or ringing of the ears, of which different kinds have been observed. It is generally a slight and fleeting disorder; but sometimes is obstinate, long continued, and very troublesome, and harasses both by day and by night.

232. The ears often ring from a very slight cause, partly obstructing the meatus itself, or Eustachian tube; so that there is an interrupted and imperfect access to the air; hence it happens, that it strikes unequally, and with too much impetus, the membrane of the tympanum, and perhaps, the internal parts. Hence, bombi, a species of ringing of the ears, are heard during the action of gaping, even by a man in perfect health.

etiam a sanissimo homine, inter hiandum audiuntur.

233. Frequentior et molestior tinnitus multos morbos, tum febres, tum *nervosi generis* affectiones, comitatur: partim ab aucto sanguinis caput versus impetu, auctoque simul *nervosi generis* sensu, ita ut ipsarum arteriarum ictus audiantur; partim ab aucto nervorum et musculorum auris labyrinthi sensu et mobilitate; quo fit, ut partes quæ debebant quiscere, donec aëris tremoribus excitatæ essent, sua sponte motus concipiant, eosdemque aliis partibus, jam nimis sentientibus, impertiantur.

234. Oritur quoque tinnitus a vehemente animi affectu; interdum a ventriculo male se habente, nasci-

inter hiandum, etiam a sanissimo homine.

233. *Frequentior et molestior tinnitus comitatur multos morbos, tum febres tum affectiones nervosi generis: partim ab aucto impetû sanguinis versus caput, que simul aucto sensu nervosi generis; ita ut ictus ipsarum arteriarum audiantur; partim ab aucto sensû et mobilitate nervorum et musculorum labyrinthi auris; quo fit, ut partes, quæ debebant quiescere, donec essent excitatæ tremoribus aëris, concipiant motus suâ sponte, que impertiantur eosdem (motus) aliis partibus, jam nimis sentientibus.*

234. *Quoque tinnitus oritur a vehemente affectû animi; nascitur interdum a ventriculo male habente*

233. A more common and more troublesome ringing of the ears attends many diseases; such as fevers, and affections of the nervous system: partly (depending) upon an increased impetus of the blood towards the head, and at the same time the sensibility of the nervous system being increased, so that the pulsations of the arteries themselves are heard; partly upon increased sensibility and mobility of the nerves and muscles of the labyrinth of the ear; hence it occurs, that the parts which ought to be at rest, until they were excited by the tremors of the air, receive motion of their own accord, and impart it to other parts, already too sensitive.

234. Ringing of the ears likewise arises from a powerful affection of the mind; it sometimes arises from a disordered

tur: interdum a malo *rheumatico* caput et aures afficiente, vel a gravedine quæ tubam afficere solet: nonnunquam vero tinnitus solus invadit, malum profecto non exiguum.

235. Variæ tamen causæ, tum hujus tum aliorum auditus vitiorum, sæpe difficillime dignoscuntur, non magis propter abditum organi situm, quam propter notitiam variarum ejus partium actionum, quam parum accuratam habemus. Ex utraque vero causa fit, ut multiplices auditus affectiones neque certe neque facile sanentur.

se: interdum a rheumatico malo afficiente caput et aures, vel a gravedine quæ solet afficere tubam: vero tinnitus solus nonnunquam invadit, profectò non exiguum malum.

235. Tamen variæ causæ, tum hujus, tum aliorum vitiorum auditûs, sæpe dignoscuntur difficillimè, non magis propter abditum situm organi, quam propter notitiam actionum variarum partium ejus, quam (notitiam) habemus parùm accuratam. Vero fit ex utrâque causâ, ut multiplices affectiones auditûs, neque certè neque facilè sanentur.

stomach; sometimes from rheumatism attacking the head and ears; or from catarrh, which usually affects the tube; but ringing of the ears sometimes comes on alone, and is no slight disorder.

235. The various causes of this, as well as of the other disorders of hearing, are generally distinguished with difficulty; not more on account of the concealed situation of the organ, than on account of our inaccurate knowledge of the actions of its different parts.—And it so happens from both causes, that the numerous affections of hearing are cured neither with certainty nor ease.

Cap. IX.—*De visu, ejusque varietatibus et vitiis.*

236. Radii, ab omni puncto corporis lucentis vel illuminati quod contemplamur, dimanantes, vel reflexi, in *corneam* oculi membranam incidunt: qui valde obliqui sunt, reflexi, vel in *uvea* vel pigmento nigro, quod *processus ciliares* oblinit, suffocati, ad interiores oculi partes nunquam perveniunt: qui vero rectius in *corneam* incidunt radii, per pellucidam illam membranam, et qui proxime jacet humorem aquosum transmissi, ad *lentem* crystallinam jam haud parum refracti perveniunt. Vi hu-

Cap. IX.—*De visú, que (de) varietatibus, et (de) vitiis ejùs.*

236. Radii, *dimanantes vel reflexi ab omni puncto lucentis vel illuminati corporis quod contemplamur, incidunt in corneam membranam oculi: (illi radii) qui sunt valde obliqui, reflexi, vel suffocati in uveá vel in nigro pigmento, quod oblinit ciliares processus, nunquam perveniunt ad interiores partes oculi: vero, (illi) radii qui incidunt rectiùs in corneam, transmissi per illam pellucidam membranam, et (per) aquosum humorem qui jacet proximè, jam haud parùm refracti perveniunt ad crys-*

Chap. IX.—*On the sense of sight, its varieties and disorders.*

236. The rays emanating or reflected from every point of a luminous or illuminated body, which we contemplate, fall upon the cornea, a membrane of the eye: the rays which are very oblique, are either reflected, or buried in the uvea, or in the pigmentum nigrum, which is spread over the ciliary processes, and never reach the inner parts of the eye; but the rays which fall more directly upon the cornea, transmitted through that transparent membrane, and the aqueous humour, which is next to it, being already somewhat refracted, reach the crystalline lens. By means of this lens,

jus *lentis*, et vitrei humoris qui proximus est, magis adhuc refringuntur, et in punctum, seu *focum*, ut vocatur, demum colliguntur, pulcherrimam, distinctam, quamvis inversam, corporis unde profluxerant imaginem super *retinam* depicturi.

237. Hæc vero delicatissima nervosa membrana, ultimum visus organum est; et ex imagine corporis inversa super eam depicta, homo, cerebrum nervumque opticum sanus, corpus ipsum, erectum, distinctum, propriisque coloribus expressum, videt.

238. Varii dantur oculi humores a Natura nihil frustra moliente, quamvis unus ad radios refringendos,

tallinam lentem. Vi hujus lentis, et (vi) vitrei humores qui est proximus, (illi radii) adhuc magis refringuntur, et demum colliguntur in punctum seu focum (ut vocatur), depicturi super retinam, pulcherrimum, distinctam, quamvis inversam imaginem, corporis, unde profluxerant.

237. *Verò hæc delicatissima nervosa membrana est ultimum organum visûs: et ex inversâ imagine corporis, depictâ in eam (membranam) homo sanus (secundum) cerebrum que opticum nervum, videt ipsum corpus, erectum, distinctum, que expressum propriis coloribus.*

238. *Varii humores oculi dantur a Naturâ moliente nihil frustrâ, quamvis unus (humor) sufficisset, ad re-*

and the vitreous humour next to it, these rays are still more refracted, and are at length collected into a point or focus (as it is called), so as to depict upon the retina a very beautiful and distinct, although inverted image of the body, from which they emanated.

237. This very delicate nervous membrane (namely the retina), is the ultimate organ of vision; and from the inverted image of a body depicted upon it, a man who is healthy as to the brain and optic nerve, sees the object itself erect, distinct, and expressed in its proper colours.

238. Different humours of the eye are given by Nature, who forms nothing without an object, although one would

et in *focum* colligendos, imaginemque in *retinam* exprimendam suffecisset, hoc potissimum, ut videtur, consilio, ut ab alieno colore, quem una et simplex *lens* dare solet, propter radios lucis inæqualiter refractos, præcaveretur: et sic homo, qua oportebat accuratione, de veris corporum coloribus judicare posset. Certissimis enim experimentis constat *lentem*, certa ratione compositam, hoc non levi simplicioris incommodo carere. Ad eundem finem haud parum conferre videtur, varia singulorum oculi humorum variis partibus densitas: qua fortasse varia vi refringente, diversa ipsorum radiorum ad refringendum facilitas compensatur.

fringendos radios et colligendos in focum, que (ad) exprimendam imaginem in retinam, potissimùm, ut videtur hoc consilio, ut præcaveretur ab alieno colore, quem una et simplex lens solet dare: et sic homo posset judicare de veris coloribus corporum, accuratione quâ debebat. Enim constat (ex) certissimis experimentis, lentem compositam certâ ratione, non carere hoc levi incommodo simplicioris. Varia densitas singulorum humorum oculi, variis partibus, videtur haud parum conferre ad eundem finem: qua variâ refringente vi, fortasse diversa facilitas radiorum ipsorum, ad refringendum, compensatur.

have sufficed to refract the rays, and gather them into a focus, and to express the image upon the retina, as it appears, with the intention of guarding against strange colours, which one simple lens is apt to produce; so that man, in this way, might judge of the true colours of bodies, with the necessary accuracy. For it appears from very accurate experiments, that a lens constructed upon a certain principle, is free from this serious inconvenience, which attaches itself to one of a more simple nature. The various density of the separate humours of the eye in the different parts, appears to contribute no little to the same object; and perhaps by this various refracting power, the different capability of refraction of the rays themselves, is compensated.

239. Neque profecto minima humoris vitrei, qui omnium oculi humorum longe maximam partem efficit, utilitas est, globum oculi implere, *retinamque* probe distendere, ita ut fere sphæram concavam repræsentet, quo plura ejus puncta imagines rerum visibilium distinctas et accuratas accipiant: nam si planior fuisset oculi fundus, vel cujuslibet fere alius figuræ quam rotundæ, propter inæqualem variarum ejus partium a centro oculi distantiam, unum tantum *retinæ* punctum, puta centrum ejus, distinctum visum habuisset. Qui vero in alia puncta incidissent radii, vel nondum satis refracti, vel postquam in *focum* semel collecti es-

239. Neque profecto est minima utilitas vitrei humoris, qui omnium humorum oculi efficit longe maximam partem, (scilicet) implere globum oculi, que probè distendere retinam, ita ut fere representat concavam sphæram, quo plura puncta ejus accipiant distinctas et accuratas imagines visibilium rerum: nam si fundus oculi fuerit planior, vel cujuslibet alius figuræ quam rotundæ, unum punctum tantum retinæ, puta centrum ejus, habuisset distinctum visum, propter inæqualem distantiam variarum partium ejus a centro oculi. Vero radii, qui incidissent in alia puncta, vel nondum satis refracti, vel dimanantes iterum, postquam semel essent collecti

239. The use of the vitreous humour is not inconsiderable; (for) it forms by far the largest portion of the humours of the eye; (it is of use) in filling up the globe of the eye, and in accurately distending the retina, so that it nearly represents a concave sphere, (and) so that many points of it may receive distinct and accurate images of visible objects. For if the fundus of the eye were more inclined to a plane surface, or of any other shape than the round, one point only of the retina, suppose its centre, would have distinct vision, on account of the unequal distance of its various parts from the centre of the eye. And the rays, which would have fallen upon other points, either from not being sufficiently refracted, or again emanating, after they were once collected into a focus, would have injured vision

sent, dimanantes iterum, imagine confusa super *retinam* depicta, visum multum corrupissent.

240. Rotundus est oculus, ut radii per eum transeuntes in justum *focum* prius colligantur quam in *retinam* incidant. Par ratio est *corneæ* convexæ, prominentis, quæ fere tanto magis prominet, quanto planior oculus animali datus est. Quin et rotunditas oculi ad liberrimum et rapidissimum ejus motum haud parum confert.

241. Mira conspiratio vel consensus inter binos oculos, interque varias oculi partes, observatur. Alter oculus motum alterius sua sponte sequitur, hac ratione, ut axes utriusque semper paralleli sint; et non nisi ho-

in focum, multùm corrupissent visum, confusâ imagine depictâ super retinam.

240. *Oculus est rotundus, ut radii transeuntes per eum, colligantur in justum focum, priusquam incidant in retinam. Est par ratio prominentis convexæ corneæ, quæ prominet fere tanto magis, quanto oculus planior est datus animali. Quin et rotunditas oculi confert haud parum, ad liberrimum et rapidissimùm motum ejus.*

241. *Mira conspiratio vel consensus observatur, inter binos oculos, que inter varias partes oculi. Alter oculus sequitur motum alterius (oculi) suâ sponte hâc ratione, ut axes utriusque sint semper paralleli; et*

considerably, by a confused image being depicted upon the retina.

240. The eye is round, that the rays passing through it may be collected into a proper focus, before they strike upon the retina. There is the same reason for the transparent cornea being convex, which is more prominent in proportion as a flatter eye is supplied to any kind of animal. Moreover the rotundity of the eye contributes considerably, to its very free and rapid motion.

241. A wonderful harmony or sympathy is observed between the two eyes, and the various parts of them. The one follows the motion of the other spontaneously, in such a way, that the axes of both are always parallel, and directed

minis conatu, levi quidem illo, et per instinctum et quasi sponte facto, in idem punctum corporis, quod contemplatur, dirigantur; quo fit, ut imago ejus prope centrum utriusque *retinæ* exprimatur; nam ibi loci fere semper perfectissimus est visus.

242. Pupilla in tenebris patula, admissa vel vividiore facta luce, statim contrahitur: et hoc consensui inter *retinam* et musculum qui pupillam regit, eamque vel arctat vel amplificat, plane tribuendum est, neque omnino irritationi ipsius musculi. Nam sano prorsus musculo isto, si nullus visus est, nulla fit pupillæ contractio. Quin et musculi pupillarum utriusque oculi conspirant; ita ut,

dirigantur in idem punctum corporis, quod contemplatur, non nisi conatû hominis, illo quidem levi, et facto per instinctum et quasi sponte; quo fit, ut imago ejus exprimatur prope centrum, utriusque retinæ; nam visus est fere semper ibi loci perfectissimus.

242. *Pupilla patula in tenebris, statim contrahitur luce admissâ vel factâ vividiore; et hoc plane tribuendum est consensui inter retinam et musculum, qui regit pupillam, que vel arctat vel amplificat eam, neque omnino (est tribuendum) irritationi musculi ipsius. Nam isto musculo prorsus sano, si est nullus visus, nulla contractio pupillæ fit. Quin et musculi pupillarum utriusque oculi conspirant; ita*

towards the same point of a body which we contemplate, not indeed without an effort, although slight, and executed by instinct, and as it were, spontaneously: in this way the image of an object is expressed near the centre of each retina; for in that part vision is nearly always most perfect.

242. The pupil (which is) dilated in the dark, is immediately contracted by light being admitted or rendered more vivid: this is to be attributed to a sympathy between the retina and the muscle, which controuls the pupil, and contracts or dilates it, and not entirely to irritation of the muscle itself. For if that muscle be in a sound state, and there be no vision, no contraction of the pupil takes place. Moreover, the muscles of the pupils of the two eyes harmonize,

admissa ad alterum oculum luce, utriusque simul pupillæ contrahantur.

243. Contrahitur quoque pupilla, siquid oculo proprius quam soliti limites distincti visus accurate intuemur; hoc, ut videtur, consilio, ut radii superflui et maxime obliqui, et quos vires oculi refringentes in justum *focum* vix potuissent colligere, excludantur. Par videtur esse ratio, quod pupilla infantibus et junioribus admodum patula, senibus fere contractior sit, quibus oculi planiores fieri solent. Nondum pro certo constat, num aliis quoque modis, oculus ad varias rerum quas contemplatur distantias, semet accommodet; hunc vero nonnulli putarunt esse usum *processuum ciliarium;*

ut, luce admissâ ad alterum oculum, pupillæ utriusque simul contrahantur.

243. *Quoque pupilla contrahitur, si intuemur quid propriùs quam limites soliti distincti visûs: hoc consilio, ut videtur, ut superflui et maxime obliqui radii, et (ut radii) quos vires, refringentes oculi vix potuissent colligere in justum focum, excludantur. Par ratio videtur esse, quod pupilla sit admodum patula infantibus ct junioribus, (sed) fere contractior senibus, quibus oculi solent fieri planiores. Nondum constat pro certo, num, quoque aliis modis, oculus accommodet semet ad varias distantias rerum quas contemplatur: vero nonnulli putarunt hunc esse usum ciliarium*

in such a way, that, if light be admitted into one eye, the pupils of both are simultaneously contracted.

243. The pupil is likewise contracted if we view any thing nearer than the usual limits of distinct vision; which appears to be for this purpose; (namely) that the superfluous and most oblique rays, and the rays which the refracting powers of the eye could scarcely collect into a proper focus, may be excluded; there seems to be the same reason for the pupil being very much dilated in infants and young persons, but is generally more contracted in old people, whose eyes are usually more flattened. There is nothing certain known, as to whether the eye can accommodate itself in any other way to the different distances of objects

nempe ut *lentem* a solita sede dimoveant, et longius a *retina* trahant, quo magis refringantur radii, priusquam in eam incidant. Certissimum autem est, oculum, vel his viribus tum musculi qui pupillam regit, tum *processuum ciliarium*, vel aliis minus cognitis, quoddammodo mutari, et ad varias rerum quas contemplatur distantias, intra certos limites, accommodari.

processuum; nempe ut dimoveant lentem a solitâ sede, et trahant (illam i. e. lentem) longiùs a retinâ, quo radii magis refringantur, priusquam incidant in eam (scilicet retinam). Autem est certissimum, oculum mutari quodammodo vel his viribus, tum musculi qui regit pupillam, tum (viribus) ciliarium processuum, vel aliis (viribus) minùs cognitis, et accommodari ad varias distantias rerum quas contemplatur, intra certos limites.

244. Diu multumque disputatum est inter *physiologos, mathematicos, metaphysicos*, quo pacto fiat, ut, ab inversa super *retinam* depicta imagine, rem ipsam rectam videamus; et cur a

244. *Est disputatum diù que multum inter physiologos, mathematicos, (et) metaphysicos, quo pacto fiat, ut videamus rem ipsam erectam, ab inversâ imagine depictâ super retinam; et cur una*

which it contemplates; but some have supposed that this is the use of the ciliary processes: namely, that they remove the lens from its usual situation, and pull it further from the retina, so that the rays may be more refracted before they fall upon it. Nevertheless, it is very certain, that the eye is altered in some way, either by these powers, by those both of the muscle which governs the pupil, and of the ciliary processes, or by others less known, and that it is accommodated to the different distances of objects which it contemplates, within certain limits.

244. It has long been a subject of much dispute amongst physiologists, mathematicians, and metaphysicians, how it occurs, that we see an object erect, from an inverted image painted upon the retina, and why one object only is seen

duplice imagine, una nimirum in utroque oculo expressa, una tantum res spectetur.

245. Res ipsæ parum utiles vetant medicum in hanc arenam descendere, ubi tot magni nominis viri non sine laude semet exercuerunt. Scire tamen juvat, ad hoc tandem ventum esse, simplicem de hac re latam esse a Natura legem, scilicet, ut omne visibile spectetur secundum directionem rectæ lineæ a puncto *retinæ*, super quod depicta fuerit ejus imago, per centrum oculi transeuntis. Nondum prolata sunt experimenta neque argumenta, quæ ostendant dictam directionem, mathematica accuratione, esse veram: sed neque error ullus, vel levis-

res tantùm spectetur, a duplice imagine, nimirum (ab) unâ expressâ in utroque oculo.

245. Ipsæ res parum utiles vetant medicum descendere in hanc arenam, ubi tot viri magni nominis exercuerunt semet non sine laude. Tamen juvat scire, tandem ventum esse ad hoc, scilicet, ut omne visibile spectetur secundum directionem rectæ lineæ a puncto retinæ, super quod imago ejus fuerit depicta, transeuntis per centrum oculi. Nondum experimenta neque argumenta sunt prolata, quæ ostendant dictam directionem esse veram, mathematicâ accuratione; sed neque ullus, neque levissimus error est detectus in hâc re. Igitur oportet (ut) concluda-

from the double image—that is, from one expressed in each eye.

245. Such subjects being in themselves of little use, forbid the medical man entering into such a field of dispute, where so many men of great repute have exercised themselves with no slight degree of honour. It is, however, useful to know, that it is at last concluded, that every visible thing is seen in the direction of a straight line from the point of the retina, upon which was painted the image of the object passing through the centre of the eye. Neither experiments, nor arguments, have yet been brought forward to prove that the said direction is true, with mathematical accuracy; but there is not any, even the slightest error,

simus, in hac rė detectus est. Oportet igitur ex jam institutis experimentis concludamus, directionem, qua punctum visibile spectatur, esse vel hanc, vel huic quam proximam. Homo igitur sic constitutus, hujusmodi nimirum videndi lege lata, si imago erecta fuisset, rem ipsam inversam vidisset; et pari ratione, quæ inversæ depinguntur, easdem erectas videt.

246. Nec verum est, quod primo intuitu simplicius et clarius videretur, rem spectari secundum verum quem habet situm et directionem; vel secundum directionem radiorum lucis, aut in *corneam* aut in *retinam* incidentium: facili enim experimento spectari potest cor-

mus ex experimentis jam institutis, directionem, quâ (directione) visibile punctum spectatur esse vel hanc, vel quam proximam huic. Igitur homo sic constitutus, nimirum lege latâ videndi hujusmodi, vidisset, ipsam rem inversam, si imago fuisset erecta; et par ratione, videt, easdem erectas, quæ depinguntur inversæ.

246. *Nec est verum quod videretur primo intuitû simplicius et clarius, rem spectari secundum verum situm et directionem quem habet: vel secundum directionem radiorum lucis, incidentium aut in corneam aut in retinam; enim facili experimento omne corpus potest*

which has been detected, on this head. Therefore we must conclude from the experiments already performed, that the direction in which a visible point is seen, is either of this kind, or very nearly allied to it. Man thus constituted, that is, according to the law of vision already laid down, would have seen the object itself inverted, if the image had been erect; and for the same reason he sees those objects erect which are painted in an inverted direction.

246. It is not true, although at first sight it might appear more clear and simple, that the object is seen according to its true situation and direction; or according to the direction of the rays of light striking either upon the cornea, or the retina: for by an easy experiment, any body may be

pus omne, loco non suo, vel pluribus locis eodem tempore; et radii lucis a puncto quovis dimanantes, vel quum primum in oculum incidunt, vel postquam, a variis humoribus refracti, ad fundum oculi perveniunt, tot diversas directiones habent, ut si visus inde penderet, omne visibile, variis eodem tempore directionibus spectatum, multiplex et confusum videretur.

247. Quæstio de simplice visu a duplice imagine, parum accurate primo proposita, postea ad majorem accurationem redacta est: neque profecto verum est, visum in homine sanissimo semper esse simplicem. Simplex vel duplex est, prout oculi varia ratione in rem quam spectamus con-

spectari, loco non suo, vel pluribus locis eodem tempore; et radii lucis dimanantes a quovis puncto, habent tot diversas directiones, vel quum primum incidunt in oculum, vel postquam perveniunt ad fundum oculi, refracti a variis humoribus, ut, si visus inde penderet, omne visibile, spectatum variis directionibus eodem tempore, videretur multiplex et confusum.

247. *Quæstio de simplice visû a duplice imagine, primo proposita parum accuratè, est postea redacta ad majorem accurationem; neque profectò est verum, visum esse semper simplicem in sanissimo homine. (Visus) est simplex vel duplex, prout oculi fuerint conversi variâ ratione in rem quam spec-*

seen out of its place, or in many places at the same time; and the rays of light emanating from any point possess so many directions, either at the time that they first fall upon the eye, or after they arrive at the bottom of the eye, having been refracted by the various humours, that, if vision depended upon this, every visible object seen in different directions at the same time, would appear multiplied and confused.

247. The question concerning simple vision from a double image, at first explained with little accuracy, has since been reduced to a greater degree of precision; nor, indeed, is it true, that sight is always single in a perfectly healthy person. Sight is either single or double, according as the eyes are

versi fuerint. Si axes binorum oculorum in idem punctum directi fuerint, duplex imago ejus puncti, una nimirum in centro utriusque *retinæ* expressa, simplicem visum efficit. Porro, res quotquot pari ab oculo distantia ad utrumque latus talis puncti sitæ sunt, simplices simul spectantur: quarum scilicet imagines super *retinam* utramque depictæ, similem cum centro ejus comparatum situm habent. Centra igitur binarum *retinarum*, et puncta in iis quæ similem quod ad centrum situm habent, supra, nempe, vel infra, vel dextrorsum, vel sinistrorsum, consentire dicuntur, vel simplicem visum dare. Res vero propius vel remotius ab oculo positæ, quam

tamus. Si axes binorum oculorum fuerint conversi in idem punctum, duplex imago ejus, nimirum una (imago) expressa in centro utriusque retinæ, efficit simplicem visum. Porrò, quotquot res sunt sitæ pari distantiâ oculo ad utrumque latus talis puncti, simul spectantur simplices; scilicet (illa res) quarum imagines depictæ super utramque retinam, habent similem situm comparatum cum centro ejus. Igitur centra binarum retinarum, et puncta in iis, quæ habent similem situm quod ad centrum, nempe supra, vel infra, vel dextrorsum vel sinistrorsum, dicuntur consentere vel dare simplicem visum. Verò res positæ propiùs, vel remotiùs oculo, quam punctum,

turned in a different manner towards the object we are viewing. If the axes of both eyes are directed towards the same point, the double image of it, that is, the one expressed in the centre of each retina, produces single vision. Moreover, all the objects situated at an equal distance from the eye, on each side of such point, are at the same time seen single; that is to say, the images of the objects painted on each retina, have the same situation relatively to its centre. Therefore, the centres of the two retinæ, and the points in them which possess the same situation in relation to the centre, namely above, or below, or to the right or left, are said to correspond, or produce single vision. But objects placed nearer, or further from the eye, than the point to

punctum in quod axes oculorum conveniunt, simul cum illo spectari possunt, earumque duplex visus est. Facile ostenditur imagines earum rerum partes *retinæ* utriusque occupare, quæ dissimiliter quod ad centrum ponuntur: nempe, in dextra parte alterius oculi, in sinistra alterius, depingi. Partes igitur *retinarum*, dissimiliter quod ad centra positæ, non consentiunt; hoc est, duplicem ejusdem rei, cujus super utramque imago depicta fuerit, visum efficiunt.

248. Varietates quædam, seu vitia leviora hujus sensus, quæ vix morbosa habentur, sæpe observantur. *Myopes* dicuntur, qui visum

in quod (punctum) axes oculorum conveniunt, possunt spectari simul cum illo, que visus earum est duplex Ostenditur facilè imagines earum rerum occupare partes utriusque retinæ, quæ ponuntur dissimiliter quod ad centrum: nempe, depingi in dextrâ parte alterius oculi, in sinistrâ (parte) alterius. Igitur partes retinarum, positæ dissimiliter quod ad centra, non consentiunt: hoc est, efficiunt duplicem visum ejusdem rei, imago cujus fuerit depicta super utramque.

248. *Quædam varietates, seu leviora vitia hujus sensûs, quæ vix habentur morbosa, sæpe observantur. (Illi) dicuntur Myopes,*[35] *qui habent*

which the axes of the eyes are directed, may be seen simultaneously, and the vision resulting from them is single. It is easily shown that the images of those objects occupy parts of each retina, which are situated differently in regard to its centre; that is to say, they are painted on the right side of one eye, and on the left of the other. Therefore, the parts of the retina, situated dissimilarly in respect to its centre, do not correspond: they produce double vision of the object, the image of which was painted upon them.

248. Certain slight disorders of this sense, which are scarcely to be considered diseases, are often observed. Those

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35. *Myopes*; this word is derived from two Greek words, *μύω*, to wink, and ὢψ, the eye, which is again derived from ὄπτομαι I see.

brevem habent, scilicet, qui nil clare et accurate vident, nisi proxime ad oculum admoveantur. Hoc fit propter radios lucis nimis refractos, in *focum* nimis cito collectos, et iterum a *foco* dimanantes, priusquam ad *retinam* perveniant; quo fit ut indistinctam super eam imaginem depingant. Causa hujus vitii frequentissima est, nimia totius oculi vel humoris ejus cujusdam convexitas, veluti *corneæ* nimis prominentis, &c. quæ radios lucis per oculum transeuntes nimis refringit. Incommodum, junioribus familiare, dum senescunt, aliquando, ut fertur, sublevatur: quod tamen minime perpetuum est. Quum primo levius hujusmodi vitium observatur,

brevem visum, scilicet, qui vident nil accuratè et clarè, nisi admoveantur proxime ad oculum. Hoc fit propter radios lucis nimis refractos, collectos nimis cito in focum, et iterum dimanantes a foco, priusquam perveniant ad retinam; quo fit ut depingant indistinctam imaginem super eam. Frequentissima causa hujus vitii est, nimia convexitas totius oculi, vel cujusdam humoris ejus, veluti corneæ nimis prominentis, &c. quæ nimis refringit radios lucis transeuntes per oculum. (Hoc) incommòdum, familiare junioribus, aliquando sublevatur, ut fertur, dum senescunt: quod tamen est minimè perpetuum. Quum levius vitium hujusmodi primo observatur, po-

persons are called myopes, or near-sighted, who see nothing accurately or clearly, unless it be brought close to the eye. This occurs from the rays of light being too much refracted, too soon collected into a focus, and again diverging from that focus, before they reach the retina; hence it is, that they paint an indistinct image upon it. A most common cause of this disorder is too great a convexity of the whole eye, or of either of its humours; as the cornea being too prominent, and too powerfully refracting the rays of light in their passage through the eye. This inconvenience, common to young people, is said sometimes to be alleviated in old age: this, however, is by no means a constant occurrence. When a disorder of this kind is first observed, it may in some degree be overcome by a habit of looking at distant

consuetudine res remotas contemplandi, oculosque a valde minutis et vicinis rebus cohibendi, quodammodo vinci, non secus ac contrario usu idem vitium acquiri, potest: nimirum, quia oculus quodammodo ad rerum, quas contemplatur, distantias sese accomodat (243). Vitrum concavum, quod radios plus facit dimanare priusquam in oculum incidant, simplicissimum est, et certissimum *Myopibus* auxilium.

249. *Presbyopes* vocantur, qui visum longum habent, vicinarum rerum confusum, remotiorum satis distinctum. Contrarias hoc vitium ac alterum agnoscit causas; oculum imprimis

test quodammodo vinci consuetudine contemplandi res remotas, que cohibendi oculos a valde minutis et vicinis rebus, non secus ac idem vitium (potest) acquiri contrario usû: nimirum, quia oculus quodammodo accommodat sese ad distantias rerum, quas contemplatur (243). Concavum vitrum, quod facit radios plus dimanare priusquam incidant in oculum, est simplicissimum et certissimùm auxilium Myopibus.

249. *(Illi) vocantur Presbyopes,*[36] *qui habent longum visum, confusum (visum) vicinarum rerum, (sed) satis distinctum (visum) remotiorum rerum. Hoc ac alterum vitium ag-*

objects, and keeping the eyes from those which are small and near, and in the same way the same disorder may be acquired, by an opposite use of it; for the eye accommodates itself, in a manner, to the distances of the objects which it contemplates (243). A concave glass, which makes the rays diverge more, before they fall on the eye, is the most simple and most certain auxiliary which can be afforded to the near-sighted.

249. They are called Presbyopes, who are long-sighted, whose vision of things that are near is indistinct, but sufficiently distinct of more distant objects.—This is subject to different causes from those of the former: amongst them is,

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36. *Presbyopes*, derived from πρέσβυς, old, and ὤψ, the eye, on account of occurring most frequently to old persons.

nimis planum, quo spatium refringendis radiis non datur; hinc senibus, etiam iis qui florentibus annis bene viderant, malum familiare, ratione haud obscura, usu vitri convexi sublevari solet.

noscit varias causas: imprimis (unam causam, scilicet) oculum nimis planum, quo spatium non datur refringendis radiis: hinc, (hoc) malum familiare senibus, etiam iis qui bene viderant florentibus annis solet sublevari usû convexi vitri, haud obscurâ ratione.

250. *Hemeralopes* dicuntur, qui interdiu tantum, scilicet in vivada luce, vident; crepusculo vero, aut nocte, vel per lunam, vel per lucernas, pene vel penitus cæci sunt. Hujusmodi vitium, in quibusdam exemplis, oriri visum est a pupilla nimis contracta et rigida, neque sat lucis debilioris in oculum admittente;

250. (Illi homines) dicuntur Hemeralopes,[37] *qui vident tantùm interdiu, scilicet in vividâ luce; vero sunt penè vel penitùs cæci, crepusculo, aut nocte, vel per lunam, vel per lucernas. Vitiam hujusmodi est visum oriri, in quibusdam exemplis a nimis contractâ et rigidâ pupillâ, neque admittente sat debilioris lucis in oculum: au-*

particularly, an eye too flat; so that sufficient space is not afforded for refracting the rays; hence this disorder, which is so common to old persons, even in those whose sight had been good in the vigour of their age, is usually alleviated by the use of a convex glass, for reasons which are well known.

250. Those persons are called Hemeralopes, who see only during day-light, that is, by a powerful light; and they are almost or completely blind by twilight, by night, or moonlight, or by candle-light. A disorder of this kind has appeared to arise in some cases, from a too contracted and fixed pupil, not admitting sufficient of that fainter light into the eye; it has appeared to arise in others from loss of sensation

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37. *Hemeralopes*, derived from ἡμέρα, a day, and ὤψ, an eye.

in aliis autem, a deficiente ipsius retinæ sensu; et aliis magis adhuc obscuris causis, veluti cum multos homines eodem tempore et loco prehenderit, quod interdum observatum est.

251. *Nyctalopes* dicuntur, qui noctu quam interdiu, hoc est, luce valde debili, quam vividiore, melius vident: rarum hominibus vitii genus, *retinæ* nimis sentienti, pupillæ nimis patulæ, ad debitam contractionem minus valenti, imputandum. Hujusmodi incommodum, sed leve et fugax, sanissimi etiam patiuntur, qui postquam diu in tenebris versati sunt, denuo ad lucem subito prodeunt.

tem (visum est oriri) in aliis (exemplis) a deficiente sensû ipsius retinæ; et causis adhuc magis obscuris, veluti cum prehenderit multos eodem tempore et loco, quod est observatum interdum.

251. *(Illi) dicuntur Nyctalopes,*[38] *qui melius vident noctu quam interdiu, hoc est, luce valde debili, quam vividiore (luce): (hoc) genus vitii rarum hominibus, (est) imputandum nimis sentienti retinæ, nimis patulæ pupillæ, minùs valenti ad debitam contractionem. Etiam sanissimi (homines) patiuntur incommodum hujusmodi, sed leve et fugax, qui postquam sunt diu versati in tenebris, denuò subito prodeunt ad lucem.*

of the retina itself, and from other causes still more obscure; as when it seizes many persons at the same time, which has sometimes been observed.

251. Those persons are called Nyctalopes, who see better by night than by day; that is, better by a weak, than by a more vivid light: this kind of disorder which is uncommon in man, is to be imputed to a too sensitive retina, to a pupil too much dilated, and less competent to its proper contraction. Even the most healthy persons are subject to inconvenience of this kind, which is slight and not permanent, who are long engaged in some dark place, and at length are exposed to a full light.

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38. *Nyctalopes*, derived from νὺξ, the night, and ὤψ, the eye.

252. Sublinitur totius oculi interna superficies pigmento nigro, quod ad *choroideam* tunicam et *ligamenta ciliaria*, pertinet; hoc fortasse consilio, ut oculus perfectissima camera obscura fiat, et imago super *retinam* depicta accuratior evadat, nullis radiis reflexis corrupta. Constat tamen miseros esse quosdam, albos Æthiopes vulgo dictos, quibus *choroidea* rubra, non secus ac cunicilis albis, data est. Homines vero tali *choroidea* instructi interdiu parum vel nihil vident, noctu melius.

253. Animalia vero, quæ sub nocte prædam quærunt, genus felis, bubo, et similia, *chroideam* habent coloratam, splendentem, quæ radios lucis bene reflectit. Hoc

252. Interna superficies totius oculi sublinitur nigro pigmento, quod pertinet ad choroideam tunicam et ad ciliaria ligamenta: fortasse hoc consilio, ut oculus fiat perfectissima obscura camera, corrupta nullis reflexis radiis. Tamen constat esse quosdam miseros, vulgo dictos albos Æthiopes, quibus rubra choroidea est data, non secus ac (est data) albis cuniculis. Verò homines instructi tali choroidea vident parùm vel nihil interdiu (sed vident) melius noctu.

253. Verò animalia, quæ quærunt prædam sub nocte, (scilicet), genus felis, bubo, et similia, habent coloratam, splendentem choroideam, quæ bene reflectit radios lucis.

252. The inner surface of the whole eye is smeared over, with the pigmentum nigrum, or black pigment, which pertains to the choroid coat and ciliary processes ; perhaps with the intention, that the eye may become a most perfect camera obscura, which is corrupted by no reflected rays. Nevertheless, it is evident that certain unfortunate creatures, commonly called white Æthiopians, or Albinos, are supplied with a red choroid coat, in the same way as white rabbits. Persons supplied with such a choroid coat, see little or nothing during the day, but (far) better by night.

253. Animals that seek their prey by night, such as the cat and owl tribe, and the like, have a coloured shining choroid coat, which powerfully reflects the rays of light.

modo, ut quidam putant, visum parum distinctum, sed quæ ad prædam captandam sufficiat, etiam in tenebris, habent; quod tamen nondum bene explicatum est. His quoque animalibus pupilla datur mobilissima, a tenuissima vixque visibili rima, in magnum circulum, secundum lumen quod est, sese dilatans, et *retina*, ut videtur, valde sentiens. Quædam ex his animalibus, albi Æthiopis instar, fulgente sole minus vident. An omnibus par vitium est? Non videtur. An arctissima pupillæ contractione corrigitur, qua parum lucis in oculum admittitur? An credibile est plus minusve reflectere lucis *choroideam* ipsam, prout tali auxilio opus

Hoc modo, habent, ut quidam putant, parum distinctum visum, sed qui sufficiat ad captandam prædam, etiam (in) tenebris: quod tamen est nondum bene explicatum. Porro mobilissima pupilla datur his, dilatans sese, a tenuissimâ que vix visibile rimâ, in magnum circulum, secundum lumen quod est, et valdè sentiens retina, ut videtur, (datur). Quædam ex his animalibus, instar albi Æthiopis, minùs vident fulgente sole. An est par vitium omnibus? Non videtur. An (visus) corrigitur arctissimâ contractione pupillæ, quâ parum lucis admittitur in oculum? An est credibile choroideam ipsam reflectere plus ve minus lucis, prout sit opus tali auxilio,

In this way, some think they have rather indistinct vision, but sufficient to catch their prey, even in the dark: this, however, has not been well explained. They have likewise a very moveable pupil, which dilates itself from the thinnest and nearly invisible slit, into a large circle, according to the quantity of light (admitted), and as it appears (also) a very sentient retina. Some of these animals, like the white Æthiopian, see less perfectly by sunshine. Is there an equal defect in all of them? It does not appear so. Is the sight corrected by the very close contraction of the pupil, so that little light is admitted into the eye?—Or is it to be believed, that the choroid itself reflects more or less light, according as there is necessity for such assistance; and

sit, et facultatem illam lucem reflectendi pendere iterum a sanguinis in membranam vasculorum plenam influxu, quem animal quodammodo regat? Validior sanguinis motus, et ideo varii animi affectus, oculos omnium animalium, et hominis ipsius, splendescere facit: deficiens hebetat; penitus demum cessans eorum splendorem prorsus extinguit.

et illam facultatem reflectendi lucem, pendere iterum ab influxû sanguinis in membranam plenam vasculorum, quem (influxum) animal quodammodo regat? Validior motus sanguinis, et ideo varii affectus animi, facit splendescere oculos omnium animalium, et hominis ipsius; (motus) deficiens hebetat; (et motus sanguinis) demum cessans prorsùs extinguit splendorem eorum.

254. Multis et gravibus vitiis obnoxius est visus. Acuitur interdum ultra modum, ita ut æger vel nihil distincte videat, vel non sine magno dolore, pari ratione ac alii sensus, a generali corporis habitu nimis sentiente, a singulari cerebri statu, phreniticis, vel etiam

254. *Visus est obnoxius multis et gravibus vitiis. Interdum acuitur ultra modum, ita ut æger vel videat nihil distinctè vel non sine magno dolore, pari ratione ac alii sensus, (scilicet) a generali nimis sentiente habitû corporis, a singulari statû cerebri, familiari*

again, that that faculty of reflecting light depends upon the influx of blood into the vascular membrane, which the animal governs in some way? A more active motion of the blood, and, consequently, various affections of the mind, give brightness to the eyes of all animals, and of man himself: when the circulation is languid it dulls them; and when ceasing at last, it utterly destroys their splendour.

254. The sense of sight is obnoxious to many severe disorders.—Sometimes it is rendered immoderately acute, so that a patient either sees nothing distinctly, or with great pain, in the same manner as the other senses; namely, from a too sensitive general habit of body, or from the peculiar state of the brain, such as is common to phrenitic patients, or

aliis febricantibus, familiari, veluti inflammatione cerebri vel ejus membranarum; sæpius vero a conditione ipsius oculi, lucis impatientes fimus. Inflammatio tunicæ *adnatæ*, et partis anterioris *scleroticæ*, ad posteriores partes oculi serpere solet; et ideo ad *chroideam*, et *retinam* ipsam; hinc lucis impatientia, dolor, magnaque irritatio, delirium nonnunquam inducens vel augens.

255. Obtunditur sæpe visus, vel plane aboletur, ipsa ætate, cum ob oculum planiorem factum, aquoso humore non bene suppleto, et *cornea*, et *lente*, vel vitreo humore marcescentibus; tum quoque propter *corneam* siccam et obscuram factam, quod languenti sanguinis

phreniticis, vel etiam aliis febricitantibus, veluti in inflammatione cerebri vel membranarum ejus: verò fimus impatientes lucis a conditione oculi ipsius. Inflammatio tunicæ adnatæ et anterioris partis scleroticæ, solet serpere ad posteriores partes oculi; et ideo ad choroideam, et retinam ipsam: hinc impatientia lucis, dolor, que magna irritatio, nonnunquam inducens vel augens delirium.

255. *Visus sæpe obtunditur, vel plane aboletur, ætate ipsa, cum ob oculum factum planiorem, humore aquoso non bene suppleto, et corneá, et lente, vel vitreo humore marcescentibus; tum quoque propter corneam factam siccam et obscuram, quod est imputandum lan-*

those feverish in any other manner, as in inflammation of the brain, or its membranes; but we become intolerant of light, from the state of the eye itself. Inflammation of the conjunctiva and front part of the sclerotic, usually creeps along to the posterior parts of the eye; and, therefore, to the choroid coat and the retina itself: hence, the intolerance of light, the pain, and excessive irritation, which sometimes brings on delirium.

255. The sight is often weakened or completely destroyed by age itself, both on account of the eye becoming flatter by the aqueous humour not being well supplied, and the cornea, lens, or vitreous humour wasting away; as well as on account of the cornea becoming dry and opaque, which

motui imputandum est, et plurimis vasis minoribus obstructis, conclusis, excæcatis; tum propter *lentem* flavescentem, instar electri factam, et ipsam *retinam* minus sentientem. Nam omnem sensum senectus minuit.

256. Interdum visus prorsus aboletur, cerebro, nervo *optico*, vel *retina*, variis modis læsis, salva ipsius oculi fabrica. Hujusmodi vitium *amaurosis*, vel *gutta serena* vocatur: dilatata et immota pupilla, humoribus pellucidis manentibus, facile distinguendum; compressioni, congestioni sanguinis, stupori nervi fere tribuendum. Si pars tantum retinæ torpet, maculæ nigræ in rebus quas spectamus

guenti motui sanguinis, et plurimis minoribus vasis obstructis, conclusis (et) excæcatis; tum propter lentem, flavescentem, factam instar electri, et (propter) retinam ipsam minus sentientem. Nam senectus minuit omnem sensum.

256. *Interdum visus prorsus aboletur, cerebro, nervo optico vel retinâ, læsis variis modis, fabricâ oculi ipsius salvâ. Vitium hujusmodi vocatur amaurosis, vel gutta serena; facilè distinguendum, dilatatâ et immotâ pupillâ, humoribus manentibus pellucidis; fere tribuendum compressioni, congestioni sanguinis, (vel) stupori nervi. Si tantùm pars retinæ torpet, nigræ maculæ conspiciuntur in rebus, quas*

(circumstance) is to be imputed to a languid motion of the blood, and to many of the little vesssels being obstructed, closed, and choaked up: also, on account of the lens becoming yellow, like amber, and the retina itself being less sensitive, old age impairs every kind of sensation.

256. Sometimes the sight is quite lost, by the optic nerve or retina being injured in various ways, (yet) with the structure of the eye sound. A disease of this kind is called amaurosis, or gutta serena, easily to be distinguished by the dilated and fixed pupil, (and) by the humours of the eye remaining transparent; (it) is generally to be attributed to compression, sanguineous congestion, or stupor of the nerve. If part only of the retina be torpid, black specks are seen in the objects we look at; and muscæ volitantes, or flies dancing

conspiciuntur, et muscæ ante oculos volitantes, signum in febribus frequens, sed pessimum, et vix non lethale.

257. Visus porro haud raro aboletur partium quavis, per quas radii transire et refringi debent, obscura aut opaca facta; veluti si *cornea* maculis obsessa luci impervia evaserit; vel humor aquosus sanguine, sero, pure, corruptus fuerit; vel si *lens*, quod sæpe accidit, et *cataracta* dicitur, fuscum colorem adepta, vel humor vitreus simili modo corruptus, vel omnes denique oculi humores inflammatione, suppuratione, soluti, confusi, mixti, lucem vel non transmittant, vel parcius et inæqualiter transire sinant. Quo fit ut vel nulla, vel ob-

spectamus, et muscæ volitantes ante oculum, frequens sed pessimum, et vix non lethale signum in febribus.

257. Porro visus haud raro aboletur quâvis partium factâ obscurâ aut opacâ, per quas (partes) radii debent transire et refringi: veluti si cornea evaserit impervia luci, obsessa maculis: vel aquosus humor fuerit corruptus sanguine, sero, (vel) pure: vel si lens adepta fuscum colorem, quod sæpe accidit, et dicitur cataracta, vel vitreus humor corruptas simili modo, vel denique omnes humores oculi, soluti, confusi, (vel) mixti inflammatione, (vel) suppuratione, vel non transmittant lucem, vel sinant (illam) transire parcius et inæqualiter.

before the eyes, are a frequent, but very bad and nearly fatal symptom in fevers.

257. Moreover, the sight is not unfrequently lost, by obscuration or opacity of some of the parts, through which the rays ought to pass and be refracted: for instance, if the cornea becomes impervious to light, being crowded with specks; or the aqueous humour be corrupted with blood, serum, or pus; or if the lens has acquired a dark colour, which often happens, and is called cataract; or the vitreous humour be diseased in a similar manner; or, finally, all the humours of the eye being dissolved, confused, or mixed up together, either transmit no light, or allow it to pass more sparingly and unequally. Hence, either none, or an ob-

scura, distorta, imperfecta, et male colorata imago super *retinam* depingatur.

258. Impedimenta visus, quod ad oculum, externa, vitia scilicet palpebrarum partiumque vicinarum tumentium, concrescentium, inflammatarum, nulla explicatione egent: neque profecto ipsius sensus vitium est, si quis non viderit, nulla luce ad oculum admissa.

259. Depravatur visus aliquando, et res colore non suo, vel etiam, quod rarius accidit, figura et situ alienis, spectantur. Hoc fit si humores insolito colore tincti fuerint, ut in morbo regio fertur accidere, quod tamen valde dubium est, vel a sanguine ex propriis vasis

Quo fit, ut vel nulla, vel obscura, distorta, imperfecta, et male colorata imago depingatur super retinam.

258. *Externa impedimenta visûs, quod ad oculum, scilicet vitia palpebrarum que vicinarum partium, tumentium, concrescentum, (vel) inflammatarum egent nullâ explicatione: neque profectò est vitium ipsius sensûs, si quis non viderit, nullâ luce admissâ ad oculum.*

259. *Aliquando visus depravatur, et res spectantur colore non suo, vel alienis figurâ et sitû quod rariùs accidit. Hoc fit, si humores fuerint tincti insolito colore, ut fertur accidere in regio morbo, (quod tamen est valde dubium) vel a sanguine elapso ex propriis*

scure, distorted, imperfect, and badly coloured image is painted upon the retina.

258. The external obstructions of vision, in regard to the eye, such as diseases of the palpebræ and neighbouring parts, swollen, growing together, or inflamed, require no definition: nor, indeed, is there any disorder of the sense of sight, if a person does not see, when no light is admitted into the eye.

259. Vision is sometimes depraved, and objects are seen with colours not their own, or with other forms and situations, which seldom occurs. This takes place, if the humours be tinged with an unusual colour, as is said to occur in jaundice (which, however, is very doubtful); or from blood

elapso et cum aquoso humore mixto. Mira depravatio, vel defectus visus constans et perpetuus, in hominibus alioquin sanissimis, et bene videntibus, non semel observatus est; nempe, ut certos colores, viridem, exempli causa, a rubro, distinguere nequeant. Alia depravatio est, quum, nulla ad oculum admissa luce, scintillas, guttulas flammeas, aureas, colores varios conspicimus. Leve plerumque et fugax mali genus, constitutione corporis valde sentiente et mobili præditis familiare, a levi, ut videtur, impulsu in *retinam* oritur, arteriarum imprimis vehementius solito aut inordinante micantium: ab ipso digito oculum premente, clausis palpebris, circulus

vasis, et mixto cum aquosó humore. Mira depravatio, vel constans et perpetuus defectus visûs, est observatus non semel, in hominibus alioquin sanissimis et bene videntibus; nempe, ut nequeant distinguere certos colores, viridem causâ exempli, a rubro. Alia depravatio est, quum conspicimus, scintillas aureas flammeas guttulas, (vel) varios colores, nullâ luce admissa ad oculum. Plerumque leve, et fugax genus mali familiare, (illis) præditis valde sentiente et mobili constitutione corporis, oritur ut videtur a levi impulsû arteriarum in retinam, imprimis micantium vehementiùs solito, aut inordinate; flammeus circulus conspicitur, ab ipso digito premente ocu-

having escaped from its proper vessels, and mixed up with the aqueous humour. A surprising depravation, or constant and permanent defect of vision, is occasionally observed in persons in other respects healthy, and whose sight is good: namely, they cannot distinguish certain colours, for instance, green from red. There is another depravation, when we see sparks, gold-coloured fiery drops, or various colours, when no light is admitted into the eye. A slight, for the most part, and fleeting kind of disorder, common to persons endowed with a very sentient and mobile constitution, arises from a slight impulse of the arteries upon the retina, especially beating more powerfully than usual, or irregularly: a fiery circle is seen, by pressing a finger upon the eye, with

flammeus conspicitur. Par fortasse ratio est scintillæ, quam vident aliquando morbo comitiali laborantes, in immensum et splendidum jubar crescentem mox antequam convulsi corruant. Simile jubar se vidisse testantur homines, ad vitam reduces postquam strangulati, aut sub aquis mersi fuissent. Cohibita nimirum respiratione, venæ capitis sanguine turgentes, totum cerebrum, partesque nervosas quæ in capite sunt, feriunt, et comprimunt. Observantur porro istiusmodi scintillæ, haud secundo omine, ab iis quibus febre laborantibus phrenitis aut ferox delirium imminent; tum quoque ab iis quibus graviora capitis mala, paralysis, *apoplexia*, *epilepsia*,

lum; clausis palpebris. Fortasse est par ratio scintillæ, quam (illi) laborantes comitiali morbo aliquando vident, crescentem in immensum et splendidum jubar, mox antequam corruant convulsi. Homines testantur se vidisse simile jubar, (cum) reduces ad vitam postquam fuerint strangulati, aut (fuerint) mersi sub aquis. Nimirum respiratione cohibitâ, venæ capitis turgentes sanguine, feriunt et comprimunt totum cerebrum, que nervosas partes, quæ sunt in capite. Porro scintillæ istiusmodi observantur, haud secundo omine, ab iis laborantibus febre, quibus phrenitis aut ferox delirium imminent; tum quoque ab iis, quibus graviora mala capitis (scilicet) paralysis, apoplexia,

closed palpebræ. Perhaps there is the same reason for the spark which persons under an attack of epilepsy sometimes see, increasing to an immense and splendid beam, immediately before they fall into convulsions. Persons attest that they have seen a similar beam of light, when returning to life, after strangulation, or submersion in water. Respiration, indeed, being checked, the veins of the head, turgid with blood, strike and compress the whole brain and nervous parts within the head. Besides, sparks of that kind are observed as no favourable omen, by persons suffering from fever, or over whom phrenitis or violent delirium are impending, as well as by those in whom more important diseases of the head, as paralysis, apoplexy, or epilepsy, are at hand.

instant. An ipsis fibris nervosis *retinæ*, motum sponte concipientibus, perceptio lucis, ubi nulla lux est, recte tribuitur?

epilepsia instant. An perceptio lucis ubi est nulla lux, recte tribuitur nervosis fibris ipsis retinæ, sponte concipientibus motum.

260. Visus distinctus, sed falsus, rerum visibilium nimirum quæ non sunt, quod genus vitii, utcunque mirum et explanatu difficile videatur, non valde rarum est, læso cerebro, insaniæ, delirio, non oculo ullo modo laboranti, imputari debet.

260. *Distinctus visus, sed falsus, nimirum visibilium rerum, quæ non sunt, quod genus vitii, utcunque videatur mirum et difficile explanatu, est non valde rarum, debet imputari læso cerebro, insaniæ, delirio, non oculo laboranti ullo modo.*

261. Frequens visus vitium est oculorum distortio, quæ *strabismus* apud medicos vocatur. Strabo est, qui axes oculorum præter solitum obliquos habet, neque ad idem punctum directos. Hinc visus imper-

261. *Distortio oculorum, quæ vocatur strabismus apud medicos, est frequens vitium oculorum. (Ille) est strabo,*[39] *qui habet axes oculorum obliquos præter solitum, neque directos ad idem punctum. Hinc visus (est) imperfec-*

Is the perception of light, where there is no light, properly attributed to the nervous fibres of the retina, spontaneously receiving motion?

260. Distinct but false vision, of truly visible objects, which do not exist, is a kind of disorder, although it may be wonderful and difficult of explanation, is not very uncommon, and ought to be imputed to injury of the brain, insanity, or delirium, and not to the eye suffering in any other way.

261. A distortion of the eyes, which is called strabismus, amongst medical men, is a frequent disorder of the eyes. He is a strabo, who has the axes of the eyes unusually oblique, nor directed towards the same point. Hence the

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39. *Strabo*, a squinting person; this word is derived from στρεβλος, distorted, and that again from στρεφω, I turn, or twist.

fectus, incertus, aliquando duplex, ideoque confusus, et sæpe ingens deformitas. Malum plerumque congenitum, haud raro conatibus, quos infans nondum conscius sui vitii, facit ad visum jucundiorem et accuratiorem reddendum, corrigitur. Idem, imitatione, quæ omnes homines, imprimis infantes, etiam inscios, multum regit, facillime discitur. Haud ita facile dediscitur.

tus, incertus, aliquando duplex, que ideo confusus, et sæpe (est) ingens deformitas. (Hoc) malum plerumque congenitum, corrigitur haud raro, conatibus, quos infans nondum conscius sui vitii, facit ad reddendum visum jucundiorem et accuratiorem. Idem facillimè discitur imitatione, quæ multum regit omnes homines, imprimis infantes etiam inscios. Dediscitur haud ita facilè.

262. Causam tanti vitii musculis oculorum sæpissime inesse verisimile est, qui male conformati, vel paralysi, rigiditate, contractione, corrupti, oculos ordinate et æqualiter regere nequeant.

262. *Est verisimile causam tanti vitii sæpissime inesse musculis oculorum, qui (musculi) male conformati, vel corrupti paralysi, rigiditate (aut) contractione nequeant regere oculos ordinate et æqualiter.*

263. Inducitur nonnun-

263. *Hoc vitium nonnun-*

sight is imperfect, uncertain, sometimes double, and therefore confused, and often there is great deformity. This evil, generally congenital, is frequently corrected by the attempts which an infant, unconscious of its defect, makes to render the vision more agreeable and accurate. This evil is acquired by imitation, which has considerable influence upon all persons, especially children, even ignorant of it.—It is unlearned not so easily.

262. It is probable that the cause of so great an evil, very often exists in the muscles of the eyes, which being badly formed, or attacked by paralysis, rigidity, or contraction, are unable to govern the eyes in a regular and equal manner.

263. This disorder is sometimes brought on by epilepsy,

quam hoc vitium *epilepsia*, in qua vehementissimæ omnium musculorum, et oculorum imprimis, convulsiones fiunt. Unde fortasse eorum distortiones et lacerationes, aut alia mala immedicabilia.

264. Morbos quosdam capitis, hydropem præsertim, nonnunquam comitatur. A magna vi capiti illata aliquando inducta est oculorum distortio; aliquando, sed rarissime, sine nota causa subito accedit.

265. Est vel alterius vel utriusque oculi: quorum distortio, major, minor, quaquaversum esse potest.

266. Sunt qui sibi persuaserunt malum nonnunquam oriri a vitio *retinarum*; veluti si solita earum puncta, centra scilicet, et

quam inducitur epilepsiâ, in quâ vehementissimæ convulsiones musculorum, et imprimis (illorum musculorum) oculorum fiunt, unde fortasse sunt distortiones aut lacerationes eorum, aut alia immedicabilia mala.

264. *Nonnunquam comitatur quosdam morbos capitis, præsertim hydropem. Aliquando distortio oculorum est inducta a magnâ vi illatâ capiti; aliquando sed rarissimè subitò accedit sine notâ causâ.*

265. *Est vel alterius vel utriusque oculi; distortio quorum, potest esse major, (vel) minor, quaquaversum.*

266. *Sunt (homines) qui persuaserunt sibi (hoc) malum nonnunquam oriri a vitio retinarum; veluti si solita puncta earum, scilicet*

in which the most violent convulsions of the muscles, and especially of those of the eyes, take place; whence, perhaps, the distortions and lacerations of them, and other irremediable evils.

264. It sometimes accompanies certain diseases of the head, especially dropsy. Sometimes distortion of the eyes is brought on by great force applied to the head: sometimes, but very seldom, it has come on without any known cause.

265. This (disorder) is of either or both eyes; the distortion of which may be greater or less in any direction.

266. There are persons who have persuaded themselves, that this disorder sometimes arises from disorder of the retinæ: for instance, when their usual points, that is, their

similiter quod ad centra posita, non consentiunt: contorsio enim ibi erit, ne visus duplex fiat. Hæc quoque videtur esse ratio quod eadem horrendum in modum augeatur, cum strabo rem prope oculum admovet, ut contempletur. Vel si centrum alterius aut utriusque retinæ parum vel nihil sentiret, ut videret homo, necesse foret ut oculos contorqueret: sic, verbi gratia, si nervus *opticus* non oblique oculum adiisset, sed centrum retinæ occupasset, omnes vel strabones fuissemus, vel duplicem habuissemus visum.

267. Sensum quendam molestissimum, quem vertiginem vocamus, medicis placuit ad visum referre, quamvis revera ad tactum,

centra, et similiter posita quod ad centra, non consentiunt: enim contorsio erit ibi, ne visus fiat duplex. Hæc quoque videtur esse ratio quod eadem augeatur in horrendum morbum, cum strabo admovet rem prope oculum, ut contempletur. Vel si centrum alterius aut utriusque retinæ sentiret parum vel nihil, foret necesse, ut homo contorqueret oculos, ut videret: sic, gratiâ verbi, si opticus nervus non adiisset oculum obliquè sed occupasset centrum retinæ, omnes fuissemus strabones, vel habuissemus duplicem visum.

267. *Placuit medicis referre ad visum, quendam molestissimum sensum, quem vocamus vertiginem, quamvis revera æque pertineat*

centres, and parts similarly situated relatively to their centres, do not correspond. This appears to be the reason why this is increased in a frightful manner, when a person who squints applies the object he is viewing near the eye. Or if the centre of the one or the other retina possessed little or no sensibility, it would be necessary that a person twisted his eyes, in order to see; so, for example, if the optic nerve had not entered the eye obliquely, but had occupied the centre of the retina, we should all have been subject to squinting, or have had double vision.

267. Some medical men have thought proper to refer to the sense of sight, a certain very troublesome sensation, which we call vertigo, although, in truth, it may as much

vel potius ad conscientiam, æque pertineat; neque enim in tenebris, neque clausis palpebris, malum fugatur.

268. Vertigo vocatur malum, siquando nosmetipsos et res vicinas, quamvis revera immotas, titubare, circumferri, tremere, vel ullo modo moveri, videre aut sentire credimus. Si gravior est vertigo, neque videre potest æger, præ caligine velut oculis obducta, neque firmiter incedere aut stare, quippe cui vires quæ artus regunt, deficiant. Vertiginem nausea solet comitari, alteraque alteram inducere.

269. Multorum et gravium quorundam morborum comes, et signum, et prænuncia observatur vertigo; *apoplexiæ*, *epilepsiæ*,

ad tactum, vel potiùs ad conscientiam: enim malum fugatur neque in tenebris, neque clausis palpebris.

268. *Malum vocatur vertigo, siquando credimus videre aut sentire nosmetipsos et res vicinas, quamvis revera remotas, titubare, circumferri aut tremere, vel moveri ullo modo. Si vertigo est gravior, æger neque potest videre, præ caligine velut obductá oculis, neque incedere aut stare firmiter, quippe cui vires quæ regunt artus, deficiant. Nausea solet comitari vertiginem, que altera (solet) inducere alteram.*

269. *Vertigo observatur comes, et signum, et prænuncia multorum et quorundam gravium morborum; (scilicet) apoplexiæ, epilepsiæ,*

appertain to touch, or rather to consciousness: for the disorder is not dispersed by darkness, nor by the palpebræ being closed.

268. That disorder is called vertigo, whenever we imagine that we see or feel that we ourselves and objects near us, although distant, stagger, are carried round, tremble, or are moved in any way. If vertigo be more intense, a patient can neither see, for the darkness, spread as it were over the eyes, nor walk or stand firmly, for, the powers which direct his limbs, fail. Nausea usually accompanies vertigo, and the one may bring on the other.

269. Vertigo is observed an attendant, symptom, and forerunner of many and certain severe diseases; such as

hysteriæ, sanguinis profluvii e naribus vel aliis partibus, mensium suppressorum, magna corporis plenitudinis, febrium, tum quas debilitas, tum quas auctus caput versus sanguinis impetus, comitatur. Vis quoque capiti illata, raro quæ ipsis oculis infertur vis, nisi quatenus totum caput afficiat, vertiginem inducit. Ingens et subita sanguinis aliorumque humorum jactura, debilitas, *syncope*, varii morbi intestinorum, ventriculi imprimis, venena multa in corpus admissa, *narcotica* præsertim, opium, et similia, et vinum, et omnis potus meracior, vertiginem inducere solent. Hinc

hysteriæ, profluvii sanguinis e naribus vel (ex) aliis partibus, suppressorum mensium, magnæ plenitudinis corporis, febrium, tum (earum) quas debilitas comitatur, tum (earum) quas auctus impetus sanguinis versus caput (comitatur). Quoque vis illata capiti, quæ vis raro infertur oculis ipsis, nisi quatenus afficiat totum caput, inducit vertiginem. Ingens et subita jactura sanguinis que aliorum humorum, debilitas, syncope, varii morbi intestinorum, imprimis ventriculi, multa venena admissa in corpus, præsertim narcotica, opium, et similia, et vinum, et omnis meracior[40] *potus solent*

apoplexy, epilepsy, hysteria, a discharge of blood from the nostrils, or other parts, suppressed menses, great fullness of the body, fevers, both such as are attended by great debility, and those attended with determination of blood to the head. Also force applied to the head, which force is seldom applied to the eye, except inasmuch as it affects the head generally, brings on vertigo. A great and sudden loss of blood and other fluids, debility, syncope, various diseases of the intestines, especially of the stomach, many poisons admitted into the body, particularly narcotics; (as) opium and the like, wine, and every kind of strong liquor, usually

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40. *Meracior* literally means more pure, simple, unmixed or clean; but as it is so commonly connected with *vinum*, it is here intended to imply some strong, unmixed, spirituous liquor.

ebrietatis omnigenæ signum. Varii quoque motus inassuetis hominibus vertiginem creant: veluti rotatio capitis vel universi corporis, jactatio maritima, præsertim si navis parva, et mare turgidum, fuerint, et similia. In his et similibus exemplis, insoliti et inordinati motus sanguinis excitantur, et cum partibus nervosis quæ in capite sunt communicantur; vel hæ per consensum cum aliis partibus male affectæ, sensum confusum, quasi rotationis, dant.

270. Quin et ex animo, certa ratione affecto, veluti conspectu rotationis rapidæ, vel prærupti aquarum lapsus, vel præcipitii horrendi, vel etiam sine ullo visu a cogi-

inducere vertiginem. Hinc (vertigo est) signum omnigenæ ebrietatis. Quoque motus creant vertiginem (in) hominibus inassuetis: veluti rotatio capitis vel universi corporis, maritima jactatio, præsertim si navis fuerit parva, et mare (fuerit) turgidum, et similia. In his et similibus exemplis, insoliti et inordinati motus sanguinis excitantur, et communicantur cum nervosis partibus quæ sunt in capite; vel hæ male affectæ per consensum cum aliis partibus, dant confusum sensum, quasi rotationis.

270. *Quin vertigo aliquando oritur et ex animo, affecto certâ ratione, veluti conspectû rapidæ rotationis, vel prærupti lapsûs aquarum, vel horrendi præcipitii*

produce vertigo. Hence vertigo is a symptom of every kind of intoxication. Different motions produce vertigo in persons unaccustomed to them; as rotation of the head or body, tossing upon the sea, especially if the vessel be small and the sea rough, and the like.—In this, as in other instances, unusual and irregular motions of the blood are excited, and communicate with the nervous parts in the head; or these being disordered by sympathy with other parts, afford a confused sensation, like rotation.

270. Besides, vertigo sometimes arises from the mind being affected in a certain manner; as by the sight of rapid

tatione intensa et veloce, vertigo aliquando oritur.

271. Aliorum morborum plerumque comes et signum, nonnunquam tamen princeps vel solus vertigo morbus, per intervalla rediens, paulatim ingravescens, functiones animi pariter atque corporis impedit et labefacit: neque firmissimum et vividissimum *Swiftii* ingenium tanto malo potuit resistere.

vel etiam sine ullo visû, ab intensâ et veloce cogitatione.

271. *Vertigo plerumque comes et signum aliorum morborum, tamen nonnunquam princeps et solus morbus, rediens per intervalla, paulatim ingravescens, impedit et labefacit paritur functiones animi atque corporis: neque firmissimum et vividissimum ingenium Swiftii potuit resistere tanto malo.*

rotation, or a broken waterfall, or frightful precipice; or even without vision, from intense rapid thought.

271. Vertigo, the attendant and symptom of other diseases, and sometimes the principal and sole disease, recurring at intervals, and gradually increasing, equally impedes and wears away the functions both of mind and body; nor could the very powerful and vigorous mind of Swift resist so great a disorder.

Cap. X.—*De sensibus qui dicuntur interni, memoria, imaginatione, judicio; eorumque varietatibus et vitiis.*

272. Præter jam descriptos sensus, seu facultates, homo et alios possidet; qui ideo interni vocantur, quod sine impulsu vel ope externa suis fungantur muneribus; et organa quæ iis maxime inserviunt, interna, abdita, externis rebus inaccessa, propriis viribus agant.

273. Perceptio re externa excitata, sua natura fugax et peritura, brevi desinit: quod si eadem res organo denuo admota fuerit,

Cap. X.—*De sensibus, qui dicuntur interni, (scilicet) memoriâ, imaginatione, judicio; que (de) varietatibus et vitiis eorum.*

272. Præter *sensus et facultates jam descriptos, homo possidet et alios: qui ideo vocantur interni, quòd fungantur suis muneribus sine impulsû vel ope externâ; et (quòd) organa quæ subserviunt iis, (sunt) interna, abdita et inaccessa externis rebus, (et) agant propriis viribus.*

273. *Perceptio excitata externâ re, fugax et peritura suâ naturâ, desinit brevi; quod si eadem res fuerit denuo admota organo,*

Chap. X. *On the senses which are called internal; viz. memory, imagination, (and) judgment, and on their varieties and disorders.*

272. Besides the senses and faculties hitherto described, man possesses also others, which are called internal, because they perform their functions without external impulse or aid; and because the organs subservient to them are internal, hidden, and inaccessible to external objects, and act by powers peculiar to themselves.

273. The perception excited by an external object, fugitive and perishable by its nature, ceases in a short time; but if the same object be again applied to an organ, it not

non modo perceptionem renovat, sed homo simul pristini quem habuit sensus reminiscitur; novit, scilicet, se eundem antea habuisse.

274. Hæc prima et simplicissima memoriæ species primæ ætati contingit, quippe quam infans semestris ostendat, dum parentes aut nutricem agnoscit, ignotos homines declinat. Hæc facultas recordatio vocatur, distinctionis causa, et principium et fundamentum perfectioris memoriæ videtur esse.

275. Quin et nihil omnino ad organa sensuum externorum admoto, nullaque juvante externa causa, et internis sæpe causis parum

non modo renovat perceptionem, sed homo simul reminiscitur[41] *pristini sensûs, quem habuit; scilicet, novit se antea habuisse eundem (sensum).*

274. *Hæc prima et simplicissima species memoriæ contingit primæ ætati, quippe quam infans semestris ostendit, dum agnoscit parentes aut nutricem, (et) declinat ignotos homines. Hæc facultas vocatur recordatio, causâ distinctionis, et videtur esse principium et fundamentum perfectioris memoriæ.*

275. *Quin et omnino nihil admoto ad organa externorum sensuum, que nullâ causâ externâ adjuvante, et sæpe causis internis parum*

only renews the perception, but man recollects at the same time the primary sensation which he had; that is to say, he knows that he had the same sensation previously.

274. This primary and most simple kind of memory falls to the lot of the earliest age, such as an infant of six months old evinces, when he recognizes his parents or nurse, and shrinks from strangers: this faculty is called recollection, for the sake of distinction, and appears to be the beginning and foundation of more perfect memory.

275. Moreover, even if nothing at all be applied to the organs of the external senses, and no external cause assist, and often internal causes be little perceived, sensations felt

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41. *Reminiscor*, to remember, governs a genitive, as well as an accusative case; as, *datæ fidei reminiscitur, reminiscitur pristini sensus.*

perspectis, sensus diu ante percepti, obliti, sopiti, homini invito nec opinanti renovantur, reviviscunt. Hujusmodi recordatio invita propius adhuc ad perfectam memoriam accedit.

276. Vera et optima memoria dicitur facultas illa, qua varias cogitationes præteritas, veluti sensus, perceptiones, &c. eodem quo fuerant receptæ ordine, ad arbitrium nostrum revocamus, detinemus, contemplamur, dimittimus.

277. Hæc, prima ætate, nulla est; paulatim accedit atque augetur. Puerili ætate, promptissima, validissima, tenacissima fit; juvenili et virili viget; senili nonnihil fatiscere solet; summa senectute dilabitur, et tandem aboletur; et fere

perspectis, sensus percepti diu ante, obliti, sopiti, renovantur (et) reviviscunt homini invito nec opinanti. Invita recordatio hujusmodi adhuc propiùs accedit ad perfectam memoriam.

276. *Vera et optima memoria dicitur illa facultas, quâ revocamus, detinemus, contemplamur, dimittimus ad nostrum arbitrium varias præteritas cogitationes, veluti sensus, perceptiones, &c. eodem ordine quo fuerint receptæ.*

277. *Hæc (memoria) est nulla in primâ ætate: paulatim accedit, atque augetur. Fit promptissima, validissima, tenacissima, (in) puerili ætate: viget juvenili et virili (ætate): solet fatiscere nonnihil senili (ætate): dilabitur et tandem aboletur*

long before, forgotten, and put to rest, are renewed, and revive in a person against his will, and not thinking upon them. Involuntary recollection of this kind makes still further approaches to perfect memory,

276. The true and best kind of memory, is that faculty by means of which we recal, detain, contemplate, and dismiss, at our pleasure, various past thoughts, as sensations, perceptions, &c., in the same order as they were received.

277. This kind of memory does not exist in early infancy; (but) by degrees it comes on and is increased: it is most ready, powerful, and retentive in boyhood; it is vigorous in youth and manhood; it usually somewhat fails when approaching advanced age; in extreme old age it falls away,

hac ratione, ut novas res dimittat facile, veterum, quas florente ætate recondiderat, adhuc tenacissima; ingravescentibus vero annis, omnes res novæ pariter atque antiquæ, e memoria penitus delentur.

278. Aliis hominibus promptior et tenacior, aliis debilior datur: cultu et usu, modo hi non nimii fuerint, incredibiliter augetur. Variis hominibus, iisdemque variis temporibus, plus minus vivada aut prompta est: ita ut vel lente admodum vel incredibili fere velocitate suo fungatur officio. Multum hic pendet a secunda aut adversa qua homo utitur valetudine; a statu animi, vel gravi affectu commoti, vel placida quiete

summâ senectute; et ferè hac ratione, ut facilè dimittat novas res, (sed) adhuc tenacissima veterum (rerum) quas recondiderat florente ætate: verò annis ingravescentibus omnes res pariter novæ atque antiquæ penitùs delentur a memoria.

278. *(Memoria) datur promptior et tenacior aliis hominibus, debilior aliis: augetur incredibiliter cultû et usû, modo hi non fuerint nimii. Est plus (vel) minus prompta aut vivida variis hominibus, que iisdem variis temporibus: ita ut fungatur suo officio vel admodum lente, vel fere incredibili velocitate. Hic multum pendet a secundâ aut adversâ valetudine, quâ homo utitur; a statû animi, vel commoti gravi affectû, vel fruentis*

and is at length completely lost; and nearly in this ratio: viz. it easily dismisses new matters, but is still very retentive of the older ones, which it had stored up in the vigour of life; but as years weigh down, all matters, equally new and old, are completely swept away from the memory.

278. Memory is supplied more prompt and retentive to some, and more feeble to others: it is surprisingly increased by cultivation and use, provided they are not carried to excess.—It is more or less prompt or vivid, in different men, and in the same men, at different times; so that it either performs its function very slowly, or with incredible velocity. This depends much upon the good or bad state of health which a man enjoys; on the state of mind, either

fruentis, et ad suas cogitationes accurate attendentis. Tum quoque corporis ratio habenda est, magis minusve sentientis aut mobilis; sanguinis motus quoque multum hic facit, incitatior, aut languescens: veluti ab exercitatione, febre, dolore, torpore, sopore, &c. Pueris, junioribus, et præter solitum vividis, rapidior solet esse memoria; et hæc inter alias causas est, cur hi judicio minus firmo aut certo polleant.

279. Viget inter somnum, saltem leviorem, memoria; sed parum accurata, neque res suo ordine, ut sano et vigilanti homini solet, profert.

280. Plerasque res novas,

placidâ quiete, et accurate attendentis ad suas cogitationes. Tum quoque ratio est habenda corporis, sentientis aut mobilis magis ve minus: quoque incitatior aut languescens motus sanguinis hic facit multum; vel ab exercitatione, febre, dolore, torpore, sopore, &c. Memoria solet esse rapidior, pueris, junioribus, et vividis præter solitum: et hæc est (una causa) inter alias causas, cur hi polleant minus firmo aut certo judicio.

279. *Memoria viget inter somnum, saltem leviorem (somnum) sed (est) parum accurata, neque paret voluntati, neque profert res suo ordine, ut solet (proferre) homini sano et vigilanti.*

280. *Memoria potissimum*

excited by some depressing affection, or in the enjoyment of placid rest, and accurately fixing attention upon its thoughts. Account is likewise to be taken of the body, whether too sensitive, or more or less irritable; likewise, a more excited or languid circulation has much influence here, either from exercise, fever, pain, torpor, drowsiness, &c. Memory is usually more rapid in boys, in young persons, and in those who are unusually lively; and this is one, amongst other causes, why they are less supplied with steady or accurate judgment.

279. Memory is active during sleep, at least during the lighter kind, but is slightly accurate, and does not present circumstances in that order, which it usually does in persons healthy and awake.

sæpe repetitas, jucundas, ingratas, vel quæ mentem ullo modo magis solito afficiant, memoria potissimum retinet. Juvat, præ omnibus, ordo rerum, eoque tanquam auxilio præsentissimo uti solemus, ad rem quamlibet in memoriam revocandam. Scientiæ omnigenæ, et judicii, memoria fons et origo est, et igitur ordo fere maxima pars, nimirum sine quo aut nulla foret memoria, aut vaga et prorsus inutilis, qualis somniantibus et delirantibus contingit.

281. Minuitur aut turbatur memoria, aut prorsus deletur, variis morbis, imprimis qui cerebrum afficiunt, *apoplexia*, paralysi, *epilepsia*, tumoribus intra caput, vi externa eidem il-

retinet, plerasque novas res, sæpe repetitas, jucundas, in gratas, vel quæ afficiant mentem ullo modo magis solito. Ordo rerum juvat præ omnibus, que solemus uti eo tanquam præsentissimo auxilio, ad revocandam quamlibet rem in memoriam. Memoria est fons et origo omnigenæ scientiæ et judicii, et igitur ordo est maxima pars, nimirum sine quo memoria foret aut nulla, aut vaga et prorsus inutilis, qualis contingit somniantibus et delirantibus.

281. *Memoria minuitur aut turbatur, aut prorsus deletur variis morbis, imprimis (illis morbis) qui afficiunt cerebrum, (scilicet) apoplexiâ, paralysi, epilepsiâ, tumoribus intra caput,*

280. Memory retains, especially, most new circumstances, those which are often repeated, (or) agreeable, unpleasant, or those which affect the mind in an unusual degree. Order is useful above all things, and we are accustomed to make use of it, as the most ready auxiliary in recalling any thing to memory, Memory is the fountain and source of every kind of science and judgment, and, therefore, order is the chief part of it; for without it, memory would be null, or vague and quite useless, such as belongs to persons dreaming, or delirious.

281. Memory is weakened, disturbed, or quite destroyed by various diseases, particularly by those which affect the brain; as apoplexy, paralysis, epilepsy, tumours within the head pressing upon it, force applied to the head, and fevers,

lata, febribus, imprimis quibus auctus est caput versus sanguinis impetus, aut cerebrum quacunque ratione valde affectum.

externâ vi illatâ eidem (i. e. capiti), febribus, imprimis (illis) quibus impetus sanguinis est auctus versus caput, aut cerebrum (est) valde affectum, quâcunque ratione.

282. Rarissime depravatur memoria, ita ut res ordine non suo menti repræsentet: quod si tale vitium acciderit, ad læsam imaginationem vel delirium referendum est.

282. *Memoria depravatur rarissime, ita ut non representet menti, res suo ordine: quod si tale vitium acciderit, est referendum ad læsam imaginationem, aut (ad) delirium.*

283. Imaginatio est facultas qua homo varias res, quas memoria recondiderat, ad arbitrium suum conjungit, dividit, et novo ordine disponit; veluti si mixtis et compositis, viri et equi, mulieris et piscis, formis, Centaurum aut Sirenem sibi finxerit.

283. *Imaginatio est (illa) facultas quâ, homo conjungit, dividit, et disponit novo ordine, varias res quas (ille) recondiderat memoriâ; veluti, si finxerit sibi Centaurum aut Sirenem (ex) mixtis et compositis formis, viri et equi, mulieris et piscis.*

284. Imaginatio quam

284. *Imaginatio est vivi-*

especially by those in which there is great determination of blood to the head, or the brain be very much affected in any kind of manner.

282. Memory is very seldom injured in such a way as to represent circumstances to the mind in a false order; but if such an evil occurs, it must be referred to diseased imagination, or delirium.

283. Imagination is that faculty by which man connects, divides, and arranges in a new order, various circumstances which he had treasured up in his memory: as, if he fancies to himself a Centaur, or a Siren, from an admixture and union of the forms of a man and a horse, of a woman and a fish.

284. Imagination is more vivid than memory, and has a

memoria vividior est, et latius imperium in animum, ejusque affectus, et *genus nervosum*, habet: quamvis memoria ipsa nonnihil hujusmodi vis possideat.

285. Cogitationes, quas hæc facultas suggerit innumeras, vix unquam in sano homine, cum rebus præteritis quas memoria contemplatur, multo minus cum rebus veris et præsentibus, quas sensus percipiunt, confunduntur: neque sanus homo, sobrius, et vigilans, res quas imaginatio, ad suum arbitrium, fingit, aut esse veras, aut unquam fuisse, credit. Si talis error acciderit, pro morbo habendus est.

286. Imaginatio infanti parva, juveni maxima, viro

dior, quam memoria, et habet latius imperium in animum, que (in) affectus ejus, et (in) genus nervosum: quamvis memoria ipsa possideat nonnihil hujusmodi vis.

285. *Cogitationes, quas innumeras hæc facultas suggerit, vix unquam confunduntur in sano homine, cum præteritis rebus, quas memoria contemplatur, multo minus cum veris et præsentibus rebus, quas sensus percipiunt: neque sanus homo, sobrius, et vigilans, credit res aut esse veras, aut unquam fuisse (veras), quas imaginatio fingit ad suum arbitrium. Si talis error acciderit, est habendus pro morbo.*

286. *Imaginatio (est) parva infanti, maxima*

more extensive controul upon the mind and its affections, and upon the nervous system; although memory possesses some influence of this kind.

285. The thoughts, which this faculty supplies without number, are scarcely ever confounded in a healthy person with past occurrences which the mind contemplates, and much less, with true and present matters, which the senses perceive: nor does a man in health, sensible and awake, believe those things to be true, or ever were so, which imagination frames at its will. Should such an error occur, it must be accounted a disease.

286. Imagination is slight in the infant, most powerful in

temperatior, seni fere reprimitur: eadem hilaribus, irritabilibus, mobilibus, et præter solitum acriter sentientibus, vividior; torpidis, frigidis, stupidis, fere nulla. Neque solis poëtis utilis facultas; quippe cujus species, rerum similitudines et convenientias, a vulgo hominum non observatas, fingat, quærat, detegat, ad conjecturas primo, ad veram scientiam, ope judicii, tandem perducens. Huic forsitan *Neutonum* pariter ac *Homerum* debemus.

juveni, temperatior viro, (sed) fere reprimitur seni: eadem est vividior hilaribus, irritabilibus, mobilibus, et (illis) acriter sentientibus præter solitum; (est) fere nulla torpidis, frigidis, et stupidis. Neque est (hæc) facultas utilis poëtis solis; quippe species cujus, fingat quærat et detegat similitudines et convenientias rerum non observatas a vulgo hominum, primo perducens ad conjecturas, tandem (perducens) ad veram scientiam ope judicii. Forsitan debemus huic, Neutonum, pariter ac Homerum.

287. Imaginationi et memoriæ hoc commune est, quod in perceptiones visus et auditus tantum imperium habent: neque profecto alio-

287. *Hoc est commune imaginationi et memoriæ, quod habent tantum imperium in perceptiones visûs et auditûs; neque profectò*

the young man, more temperate in manhood, and is nearly checked in old age: it is more vivid in those that are cheerful, irritable, restless, and possessed of unusually acute sensibility; it is next to nothing in those that are torpid, cold, and stupid. This faculty is not of use to poets alone, for one kind of it imagines similarities and correspondence between things not observed by the bulk of men, seeks out and detects them, at first leading to conjectures and at last to real science, with the aid of judgment. Perhaps we are indebted to this kind of imagination for a Newton, as well as a Homer.

287. There is this in common to imagination and memory, that they possess considerable influence upon the percep-

rum sensuum externorum perceptiones, aut accurate, aut fortiter renovare possunt.

288. Judicium facultas est, qua perceptiones et cogitationes omnigenas, sensus, memoriæ, imaginationis, contemplamur, comparamus, earum similitudines et differentias detegimus, variasque inde conclusiones deducimus. Hæc facultas infanti et puero debilis est; consistente ætate, firmior et certior; ætate paulatim corrumpitur, et morbis quotquot memoriam minuunt; nam sine memoria nullum potest esse judicium.

289. Omnes hæ facultates tam pure mentis sunt, ut primo intuitu haud quicquam corporei iis inesse

possunt renovare aut accuratè aut fortiter perceptiones aliorum externorum sensuum.

288. *Judicium est facultas, quâ contemplamur, comparamus omnigenas perceptiones et cogitationes, sensûs, memoriæ, et imaginationis, (que) detegimus similitudines et differentias earum que inde deducimus varias conclusiones. Hæc facultas (est) debilis infanti et puero: firmior et certior consistente ætate; paulatim corrumpitur ætate, et (illis) morbis, quotquot minuunt memoriam, nam nullum judicium potest esse sine memoriâ.*

289. *Omnes hæ facultates sunt tam purè mentis, ut primo intuitû haud quicquam corporei videatur in-*

tions of sight and hearing; and cannot, indeed, renew either with accuracy or force the perceptions of the other external senses.

288. Judgment is the faculty by which we contemplate and compare all kinds of perceptions and thoughts, of the sensation, memory, and imagination, and detect their resemblances and differences, and thence deduce various conclusions. This faculty is weak in the infant and boy; is firmer and more accurate in established age: it is by degrees gradually corrupted by age, and by such diseases as diminish the memory, for without it no judgment can exist.

289. All these faculties are so purely of the mind, that at first sight, there seems to be nothing corporeal in them:

videatur: docent tamen morbi qui eas impediunt, certum cerebri statum, ut bene exerceantur, requiri: idque sensuum internorum primarium esse organum. Nec desunt philosophi et medici non parvi nominis, qui negant ullam in mente mutationem vel cogitationem fieri, quem certa et quæ eidem respondet cerebri mutatio non comitetur. Res parum certa, parum utilis, neque facile ad experimentum reducenda (120, et seq.) Tantum enim abest, ut ullam mutationum quæ in cerebro fiunt, vel modi quo variæ ejus partes operantur, dum memoria, imaginatio, judicium exercentur, scientiam habeamus, ut ne quidem sana de his rebus

esse; tamen morbi, qui impediunt eas, docent, certum statum cerebri requiri, ut bene exerceantur: que id (i. e. cerebrum) esse primarium organum internorum sensuum. Nec philosophi, nec medici non parvi nominis desunt, qui negant ullam mutationem aut cogitationem fieri in mente, quem, certa mutatio et (mutatio) cerebri quæ respondet eidem, non comitetur. Res (est) parum certa, parum utilis, neque facile reducenda ad experimentum (120, *et seq.) Enim tantum abest, ut habeamus ullam scientiam mutationum, quæ fiunt in cerebro, vel modi quo variæ partes ejus operantur, dum memoria, imaginatio, (aut) judicium exercentur, ut ne*

however, diseases, which impede them, shew that a certain state of the brain is required for their being well exercised; and that it is the primary organ of the internal senses. Neither philosophers, nor medical men of no little report, are wanting, who deny that any change or thought takes place in the mind, which a certain change, and that also of the brain, does not accompany. The matter itself is of little certainty or use, nor can it be reduced to experiment, (120, and following sections). For we are so far from having any knowledge of the changes which take place in the brain, and of the operations of its various parts, whilst memory, imagination, or judgment are being exercised, that no reasonable

conjectura hactenus fuerit prolata.

290. Functionis igitur, cujus ratio in sanitate tam atra caligine obscuratur, morbos parum intellectos esse oportet. Suos tamen morbos habet, graves, molestos, miserandos, omni attentione dignos: nimirum qui mentem ipsam, qua cæteris animalibus præstamus, vitient, et inutilem reddant.

291. Alienatur mens, siquando homo cogitationes memoriæ aut imaginationis cum perceptionibus sensuum externorum confundit, et sic, quæ non sunt, vel nunquam fuere, adesse credit: vel si judicium de rebus male sanum, et a com-

quidem sana conjectura fuerit hactenus prolata de his rebus.

290. *Igitur oportet morbos (hujus) functionis esse parum intellectos, ratio cujus in sanitate obscuratur atrâ caligine. Tamen habet suos morbos, graves, molestos, miserandos, dignos omni attentione: nimirum, qui vitient et reddant inutilem, mentem ipsam, quâ præstamus cæteris animalibus.*

291. *Mens alienatur, siquando homo confundit cogitationes memoriæ aut imaginationis cum perceptionibus externorum sensuum, et sic credit (res) adesse, quæ non sunt, vel nunquam fuêre: vel si fert judicium male sanum et alienum a com-*

conjecture has hitherto been brought forward on these subjects.

290. Therefore it is a necessary consequence, that diseases of this function are little understood, the reason of which, in a state of health, is concealed in utter darkness. Nevertheless, it has its diseases, acute, troublesome, pitiable, and deserving all our attention; for they vitiate and render inert the mind itself, in which respect we excel other animals,

291. The mind is deranged, whenever a person confounds the thoughts of the memory or imagination with the perceptions of the external senses, and believes things to be present which are not, and never were; or, if he forms a judgment unsound, and different from the common sense of men on

muni hominum sensu alienum, fert. Hoc autem rarissime, si unquam, accidit. Judicium sanum mente captus ferre solet a falsis principiis: neque male ratiocinatur, sed potius decipitur furens, qui, Jovem se credens, Jovis fulmina posceret.

292. Mentis alienatio vesania generatim vocatur; si ex febre est, delirium; citra febrem, generalis furor insania appellatur; dementia vero minus generalis, scilicet de re una alterave, sana de omnibus aliis mente, melancholia vocatur: quicum insignis aliquando tristitia conjungitur. Nullus tamen existit limes accuratus inter sanam mentem et vesaniam. Omnis præter

muni sensû hominum de rebus. Autem hoc accidit rarissime, si unquam. (Homo) captus mente solet ferre sanum judicium a falsis principiis: neque furens male ratiocinatur, sed potius decipitur, qui credens se (esse) Jovem, posceret fulmina Jovis.

292. *Alienatio mentis vocatur generatim vesania; (vocatur) delirium, si est ex febre; citra febrem, generalis furor vocatur insania; vero minus generalis dementia, scilicet de unâ vel alterâve, mente sanâ de omnibus aliis, vocatur melancholia: quicum insignis tristitia aliquando conjungitur. Tamen nullus accuratus limes existit inter sanam mentem et vesaniam,*

those subjects. This, however, occurs very seldom, if ever. A deranged person is accustomed to form a sound judgment, but on false principles; nor does the raving madman reason badly, but is rather deceived, who thinking himself Jupiter, asks for his thunderbolts.

292. Aberration of intellect is called generally vesania; delirium, when it arises from fever; (when) without fever, general derangement is called insanity: but a less general derangement, that is on one particular subject, but collected on others, is called melancholy, with which, remarkable sadness is sometimes combined. However, there exists no precise limit between a sound mind and vesania; every kind

solitum hilaritas ad insaniam vergit; et mœstus et meticulosus animus ad melancholiam appropinquat.

omnis hilaritas præter solitum vergit ad insaniam; et mæstus et meticulosus animus appropinquat ad melancholiam.

293. Delirium varii generis febres comitatur: aliquando leve, facile discessurum, et vix mali ominis: sæpe tamen grave, et pessimi ominis, magnam curam et attentionem postulat.

293. *Delirium comitatur febres varii generis: aliquando (est) leve, facilè discessurum, et vix mali ominis: tamen sæpe grave, et pessimi ominis, postulat magnam curam et attentionem.*

294. Delirium ferox est vel mite. Ferox præcedunt et comitantur, vultus rubor, capitis dolor, ingens arteriarum pulsus, aurium tinnitus, oculi rubri, inflammati, truces, micantes, lucis impatientes, et vel nullus somnus, vel dira quies horrendis somniis rupta, mores soliti exuti, novi induti, pro

294. *Delirium est ferox vel mite. Rubor vultûs, dolor capitis, ingens pulsus arteriarum, tinnitus aurium, oculi rubri, inflammati, truces, micantes, impatientes lucis, et vel nullus somnus, vel dira quies rupta horrendis somniis, soliti mores exuti, novi (mores) induti, morosi, et immansueti pro*

of unusual cheerfulness verges to insania, and a sad and timid mind approximates to melancholy.

293. Delirium accompanies fevers of different kinds: sometimes it is slight, easily going away, and scarcely a bad symptom. However it is often severe, and a very unfavourable prognostic, and requires great care and attention.

294. Delirium is furious or mild. Redness of countenance, pain of the head, great arterial excitement, ringing of the ears, eyes red, inflamed, fierce, glistening, and intolerant of light, either no sleep, or frightful rest broken by horrible dreams, usual manners shaken off, new ones put on, morose and uncouth instead of gentle, passion, derangement first

mitibus morosi et immansueti, iracundia; animi alienatio, primo inter somnum et vigiliam observanda, imaginationi fides data, perceptiones ex sensibus externis nullæ vel neglectæ, et cogitationes memoriæ sine ordine prolatæ, furor demum, et nonnunquam insolita et incredibilis vis artuum, ita ut plures homines unum ægrotantem vix possint compescere.

295. Mite, contra, delirium, cum pulsu sæpe debili, vultu pallido, collapso, vertigine a situ erecto, prostratis viribus, sæpe observatur. Dolor capitis quoque adest, sed minus acutus quam in altero genere; raro iracundia, sæpe stupor, aliquando mœror insignis et

mitibus, iracundia, alienatio animi primo observanda inter somnum et vigiliam, fides data imaginationi, perceptiones ex externis sensibus nulla vel neglectæ, et cogitationes memoriæ prolatæ sine ordine, demum furor, et nonnunquam insolita et incredibilis vis artuum, ita ut plures homines vix possint compescere unum ægrotantem, præcedunt et comitantur ferox (delirium).

295. *Contra mite delirium sæpe observatur, cum pulsû debili, cum pallido collapso vultû, vertigine a erecto sitû, prostratis viribus. Dolor capitis quoque adest, sed minus acutus, quam in altero genere; raro est iracundia, sæpe stupor, aliquando insignis mæror et*

perceived between sleeping and waking, faith placed in the imagination, the perceptions of the external senses lost or neglected, and the thoughts of memory brought forth without order, at length rage, and sometimes an unusual and incredible strength of the limbs, so that many men can scarcely hold one patient, precede and accompany furious delirium.

295. On the other hand mild delirium is often observed, with a weak pulse, with a pale countenance, with vertigo from the erect position, and with prostration of strength: there is also pain in the head, but less severe than in the other kind; there is seldom rage, often stupor, sometimes

metus: in semisomni primo observatur mentis alienatio, admissa luce, alloquentibus amicis, pro tempore aliquando pellenda; æger multum sibi; mussitat, quæ circum fiunt parum curat; tandem stupidus factus, neque famem, nec sitim qua fauces arescunt, percipit, nec alias solitas propensiones; quo fit, ut urina et stercus, inscio ægro, elabantur. Ingravescens malum, in *subsultus tendinum*, tremores, convulsiones, animi defectiones, mortem, desinit. Alterum quoque delirii genus, deficientibus ægri viribus, in hoc sæpe mutatur.

296. Docent quæ utrumque comitantur signa, insolitum, inordinatum, inæqua-

metus: alienatio mentis primo observatur in semisomni, aliquando pellenda pro tempore, luce admissâ, amicis alloquentibus; æger multum mussitat sibi, parum curat, (illa) quæ fiunt circum; tandem factus stupidus, percipit neque famem, neque sitim quâ fauces arescunt, nec alias propensiones; quo fit, ut urina et stercus elabantur, ægro inscio. Malum ingravescens, desinit in subsultus tendinum, tremores, convulsiones, defectiones animi (et) mortem. Quoque alterum genus delirii sæpe mutatur in hoc, viribus ægri deficientibus.

296. *Signa quæ comitantur utrumque, docent, insolitum, inordinatum, inæqua-*

remarkable sadness and fear; derangement is first observed when half-sleeping, and may be dispersed for a time by the admission of light, and conversation of friends: the patient often mutters to himself, and cares little about the things done around him; at length become stupid, he neither feels hunger, nor the thirst by which his lips are parched, nor other propensities; hence the urine and fæces escape involuntarily. The malady increasing terminates in subsultus tendinum, tremors, convulsions, syncope, and death. The other kind of delirium, likewise, is often changed into this one, by the strength of the patient failing.

296. The symptoms which accompany both kinds, shew that an unusual, irregular, and unequal motion of the blood,

lem sanguinis per cerebrum motum, statum ejus qui ad sanam mentem requiritur mutare: inflammationem cerebri, vel magis vel minus generalem et vehementem, aliquando subesse satis verisimile est, quamvis generalia inflammationis in corpore signa levia fuerint: docent cadaverum inspectiones, quæ sæpe ostenderunt insolitum, vel totius cerebri vel partis ejus, ruborem; et effusionem, suppurationem, &c. intra caput.

297. Verum et ab aliis causis, præter sanguinis motum, cerebri status multum affici potest, et delirium induci. In multis febribus, veluti in iis quas insignis debilitas ab ipso initio co-

lem motum sanguinis per cerebrum, mutare statum ejus qui requiritur ad sanam mentem: est satis verisimile, inflammationem cerebri vel minus vel magis generalem et vehementem subesse aliquando, quamvis generalia signa inflammationis in corpore fuerint levia; inspectiones cadaverum docent, quæ sæpè ostenderunt insolitum ruborem, vel totius cerebri vel partis ejus; et effusionem, suppurationem, &c. intra caput.

297. *Verum status cerebri potest multum affici et delirium induci et ab aliis causis, præter motum sanguinis. In multis febribus, veluti in iis, quas insignis debilitas comitatur ab initio,*

through the brain, changes that state of it, which is necessary for a sound mind: it is very probable that inflammation, more or less general and acute, is sometimes present, although the general symptoms of inflammation in the body were slight; post mortem examinations shew this, and often have shewn unusual redness, either of the whole brain, or of part of it; also effusion, suppuration, &c. within the head.

297. The condition of the brain may be much affected, and delirium brought on also from other causes, besides the motion of the blood. In many fevers, as in those attended by great weakness from the beginning, the nervous system is affected before, and more than the circulation: and very

mitatur, *genus* ipsum *nervosum* prius et magis quam sanguinis motus laborat: cujus vitia bene multa, non secus ac sanæ actiones, sensibus non obvia erunt. Signa vero læsionis plane ostendunt inæqualem, inordinatam ejus actionem, vel incitationem, ut multi vocant, fieri. Delirii a venenis hæc quoque ratio est.

298. Ex dictis, ratio non plene quidem sed aliquatenus redditur, cur varii generis, vehementiæ, ominis, delirium; cur sæpe motu, luce, strepitu, animi affectibus, medicamentis stimulantibus, calore, auctum; cur nunc misso ex venis sanguine, et tenui diæta, nunc vino et stimulantibus tollatur; cur aliquando visu

ipsum nervosum genus laborat priùs et magis, quam motus sanguinis: bene multa vitia cujus, non erunt obvia sensibus, non secus ac sanæ actiones. Verò signa læsionis planè ostendunt inæqualem actionem ejus, incitationem ut multi vocant, fieri. Hæc quoque est ratio delirii a venenis.

298. *Ex dictis, ratio redditur, non quidem plene sed aliquatenus cur delirium, (sit) varii generis, vehementiæ, ominis; cur sæpe auctum, luce, strepitû, affectibus animi, stimulantibus medicamentis, (et) calore; cur tollatur nunc sanguine misso ex venis et diætâ, nunc vino et stimulantibus; cur levetur vel com-*

many disorders of it will not be obvious to the senses, no more than healthy actions. But the symptoms of an injury clearly shew that an unequal action of it, an excitement as some call it, takes place: this is the reason of the delirium from poisons.

298. From what has been above said, a reason is given, not clearly indeed, but to some extent, why delirium is of various kinds, violence, and prognostic; why it is often increased by light, noise, affections of the mind, stimulant medicines, and heat; why, at one time, it is removed by taking away blood from the veins, and by diet at another time, by wine and stimulants; why it is relieved or checked,

et colloquio amicorum et adstantium, rerumque bene notarum conspectu, levetur vel compescatur; cur sæpe ingravescat si æger in lecto detineatur, mitius evasurum si surrexerit, et paulisper erectus sederit.

299. Melancholiæ et insaniæ ratio multo densioribus tenebris obtegitur: scilicet, quæ sine febre sunt, aut motu sanguinis ullo modo turbato; sæpe quoque hæreditariæ, a prima et congenita corporis, et præsertim cerebri, fabrica, ut videtur, pendentes, cujus tamen vitium a subtilissimo *anatomico* non detegi posset: quæ per intervalla recurrunt sæpe longa, quibus homines mente sana in cor-

pescatur aliquando visû et colloquio amicorum et adstantium, que conspectû bene notarum rerum; cur sæpe ingravescat, si æger contineatur in lecto, evasurum mitius si surrexerit, et sederit erectus paulisper.

299. *Ratio melancholiæ et insaniæ obtegitur multò densioribus tenebris: scilicet, quæ sunt sine febre aut motû sanguinis turbato ullo modo; sæpe quoque sunt hæreditariæ, pendentes, ut videtur, a primâ et congenitâ fabricâ corporis, præsertim cerebri, vitium cujus tamen non posset detegi a subtilissimo anatomico: quæ sæpe recurrunt post longa intervalla, quibus homines videntur frui sanâ mente in*

sometimes by the sight and conversation of friends and bystanders, and by the sight of familiar objects; why it is often increased if the patient be kept in bed, becoming slighter if he gets up, and sits for awhile in an erect posture.

299. The reason of melancholy and insania is veiled in still greater obscurity; for they exist without fever, or the circulation of the blood being disturbed in any way; they are also often hereditary, depending, as it appears, on the primary congenital structure of the body, and especially of the brain, the disorder of which, nevertheless, cannot be detected by the most minute anatomist: they often occur after long intervals, during which persons appear to enjoy a sound mind in a sound body; and they, lastly, often arise

pore sano frui videntur: et quæ denique a malis mentis, gravibus nimirum affectibus, sæpe oriuntur, quorum effectus in cerebrum, et ratio qua adeo nocent, prorsus ignota sunt.

300. Notum tamen est varia cerebri vitia, obstructiones, tumores, vel ipsius, vel calvariæ in id prementis, vim capiti illatam, et, ut ferunt scriptores medici, cerebri ipsius duritiem, siccitatem, et irritamenta quædam *genus nervosum* stimulantia, malum inducere. Et profecto tanta irritatio mente captis est, ut sæpe per longum tempus parum vel nihil dormiant, neque solitis remediis facile sopiantur.

301. Sed neque hæc,

sano corpore: et quæ dænique sæpe oriuntur a malis mentis, nimirum gravibus affectibus, effectus quorum in cerebrum, et ratio quâ nocent adeo, sunt prorsùs ignota.

300. *Tamen notum est varia vitia cerebri, (scilicet) obstructiones, tumores, vel ipsius (cerebri) vel calvariæ prementis in id, vim illatam capiti, et, ut medici scriptores ferunt, duritiem, siccitatem cerebri ipsius, et quædam irritamenta stimulantia nervosum genus, (posse) inducere malum. Et profectò est tanta irritatio captis mente, ut sæpe per longum tempus dormiant parum vel nihil, neque facile sopiantur solitis remediis.*

301. *Sed hæc, quamvis*

from disorders of the mind, namely, depressing affections, the effects of which upon the brain, and the reason of their being so noxious, are entirely unknown.

300. However it is well known that various diseases of the brain, such as obstructions, tumors, either of the brain itself, or of the skull-cap pressing upon it, that force applied to the head, as medical writers relate, that hardness and dryness of the brain itself, and certain irritating substances stimulating the nervous system, may bring on this disorder. And, indeed, there is such irritation in deranged persons, that for a long time they sleep little, or not at all, and are not easily put to sleep by the usual remedies.

301. This slight, but imperfect knowledge concerning

quamvis exigua et imperfecta, de cerebri et mentis morbis, scientia, suis difficultatibus caret: nam facta cerebri vel partis ejus cujusvis læsione, tumore, osse in mucronem crescente et irritante, &c. nemo prædixerit quidnam mali talis læsio factura sit; *epilepsiam*, *apoplexiam*, *hemiplegiam*, stuporem, melancholiam, furorem, dolorem capitis, aut nil præter solitum. Non desunt enim exempla hominum, qui, post amissam haud exiguam cerebri partem, convaluerunt, et diu vixerunt; vel qui, corrupta magna cerebri parte, nil incommodi perceperunt, donec tandem subito corruerint convulsi et moribundi.

302. Superest et aliud

exigua et imperfecta scientia de morbis cerebri et mentis, neque caret suis difficultatibus: nam læsione cerebri vel cujusvis partis ejus factâ, tumore, osse, crescente in mucronem et irritante, &c. nemo prædixerit, quidnam mali, talis læsio sit factura: (an) epilepsiam, apoplexiam, hemiplegiam, stuporem, melancholiam, furorem, dolorem capitis, aut nil præter solitum. Enim exempla non desunt hominum, qui convaluerunt aut diu vixerunt, post amissam haud exiguam partem cerebri; vel qui perceperunt nil incommodi, magnâ parte cerebri corruptâ, donec tandem corruerint convulsi et moribundi.

302. *Et aliud vitium in-*

diseases of the brain and mind, is not without its difficulties; for if the brain or any part of it be injured, no person could have foretold what mischief such an injury is about to produce; whether epilepsy, apoplexia, hemiplegia, stupor, melancholy, rage, pain of the head, or any thing unusual. Instances are not wanting of men, who have recovered and lived a long time, after having lost no inconsiderable portion of the brain; or, who have felt no inconvenience by a large portion being corrupted, until at last they sunk, convulsed, and moribund.

302. There remains another disorder of the internal senses,

sensuum internorum vitium, ab his omnino diversum, fatuitas scilicet. Fatui sunt qui judicium de rebus nullum, et memoriam aut nullam, aut vitæ muneribus imparem, habent. Fatuitas quædam revera omnibus infantibus communis, naturalis, neque morbosa est: quod si ultra infantiam permanserit, tum morbus est gravis, et plerumque insanabilis. * Similes ac alia sensuum internorum vitia fatuitas agnoscit causas, quantum hæ oculis vel scalpello detegi possint: *epilepsiæ* frequens comes et effectus observatur. Hæc, si a causis extra caput sitis originem duxerit, veluti a vermibus in intestinis hospitantibus, expulsis vermibus,

ternorum sensuum omnino diversum ab his superest, scilicet fatuitas. (Illi) sunt fatui qui habent nullum judicium de rebus, et aut nullam memoriam, aut imparem muneribus vitæ. Reverà quædam fatuitas est communis omnibus infantibus, naturalis, neque morbosa: quod si permanserit ultra infantiam, tum est gravis, et plerumque insanabilis morbus. Fatuitas agnoscit similes causas ac alia vitia internorum sensuum, quantum hæ (causæ) possint detegi oculis vel scalpello: (fatuitas) observatur frequens comes et effectus epilepsiæ. Si hæc (scilicet epilepsia) duxerit originem a causis sitis extra caput, veluti a vermibus hospitantibus in intestinis, vermibus

quite different from these, namely, fatuity. They are fatuous who possess no judgment of things, and no memory, or one unequal to the duties of life. In truth, a certain kind of fatuity, common to all infants, is natural, and not morbid; but if it remains beyond infancy, it becomes an important, and generally an incurable disease. Fatuity is brought on by the same causes as the rest of the external senses, as far as they can be detected by the eyes and the knife: it is observed as a frequent attendant, and effect epilepsy. If this has derived its origin from causes external to the head, as from worms dwelling in the intestines; if the worms be

sanataque *epilepsia*, mens fatuo aliquando accedit.

203. Haud absimile est, fatuitatem infantum, et memoriæ, ideoque judicii defectum, qui senibus accidit, a statu cerebri in his nimis duri et rigidi, in illis vero nimis mollis, oriri.

expulsis, que epilepsiâ sanatâ, mens aliquando accedit fatuo.

303. *Est haud absimile, fatuitatem infantum, defectum memoriæ, et ideo judicii, qui accidit senibus, oriri, a statû cerebri nimis duri et rigidi in his (i. e. in senibus) verò nimis mollis in illis (i. e. in infantibus).*

expelled, and the epilepsy be cured, intellect sometimes returns to a fatuous person.

303. It is not improbable, that the fatuity of infants, and loss of memory, and consequently of judgment, which happens to old men, arises from a state of brain too hard and rigid in the latter, but too soft in the former.

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ERRATA.

Page 69, in translation, Sect. 86, *read*, "Much also depends upon the good or bad digestion of the same food," &c.

Page 193, in translation, Sect. 252, *after* "Camera obscura," *read*, "And the image painted on the retina may become more accurate, being corrupted by no reflected rays."

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